

(25,505)

SUPREME COURT OF THE UNITED STATES.

OCTOBER TERM, 1916.

No. 675.

GRINNELL WASHING MACHINE COMPANY, PETITIONER,

vs.

E. E. JOHNSON COMPANY.

ON WRIT OF CERTIORARI TO THE UNITED STATES CIRCUIT COURT
OF APPEALS FOR THE SEVENTH CIRCUIT.

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IN THE
United States Circuit Court of Appeals
FOR THE SEVENTH CIRCUIT.

OCTOBER TERM, A. D. 1914.

No. 2285

E. E. JOHNSON COMPANY,
Appellant.

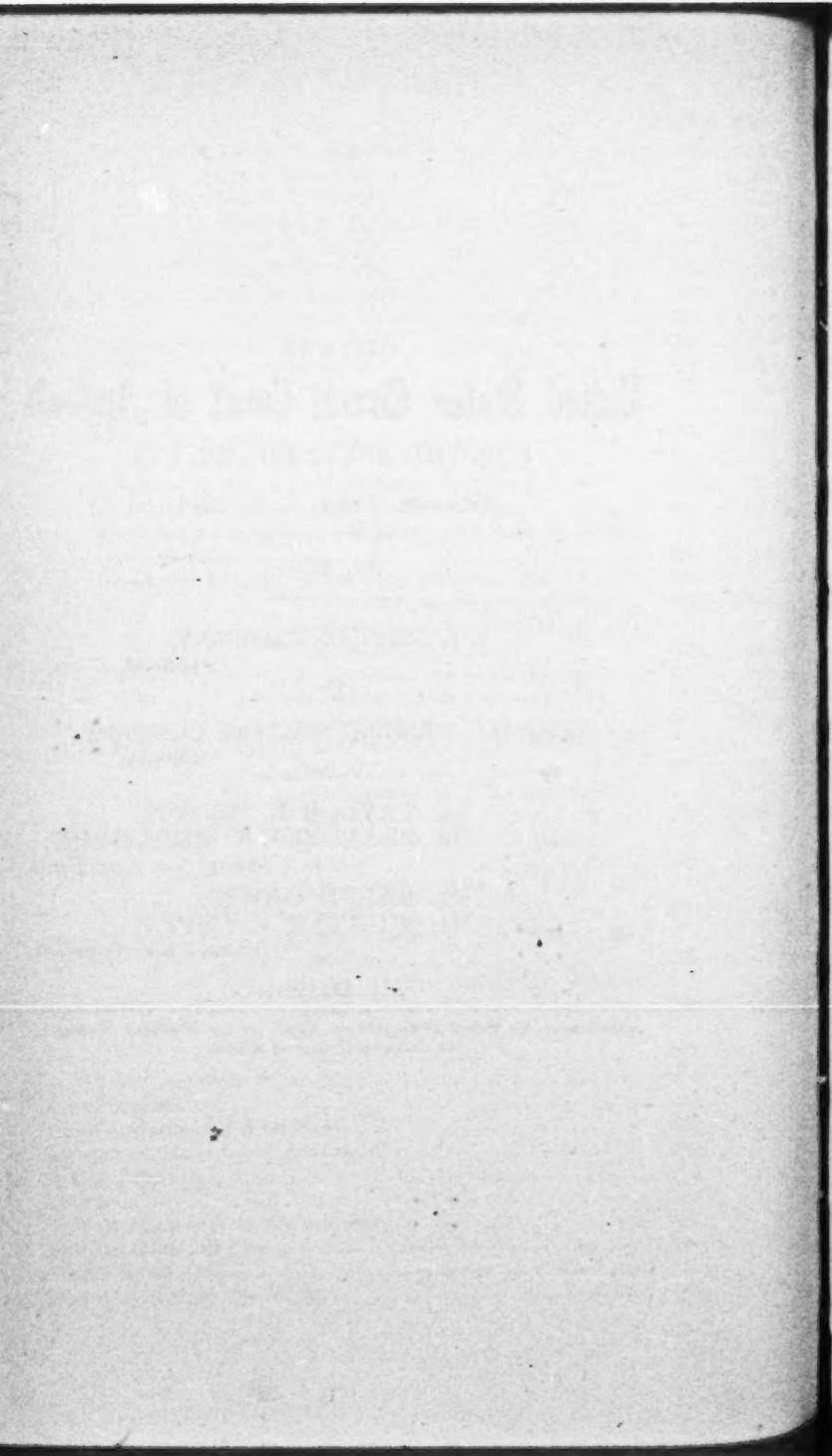
VS.

GRINNELL WASHING MACHINE COMPANY,
Appellee.

MR. TAYLOR E. BROWN,
MR. CLARENCE E. MEHLHOPE,
Counsel for Appellant.

MR. RALPH ORWIG,
MR. WILLIAM V. TEFFT,
Counsel for Appellee.

Appeal from the United States District Court for the Northern Division of
the Southern District of Illinois.



IN THE UNITED STATES DISTRICT COURT FOR THE
NORTHERN DIVISION OF THE SOUTHERN
DISTRICT OF ILLINOIS.

File
June

Grindell Washing Machine Co.,
Complainant,
vs.
E. E. Johnson Company,
Defendant.

In Equity
No. 20.

STIPULATION.

IT IS HEREBY STIPULATED by and between the parties hereto through their solicitors, that the statement of the evidence in the above entitled case, prepared by solicitors for defendant-appellant, attached hereto, is a true, complete and proper statement of the evidence and that the same may be approved by the court in accordance with the rule therein made and provided without further notice to the solicitors for the complainant-appellee.

IT IS FURTHER STIPULATED AND AGREED that the said statement of evidence, heretofore lodged by solicitors for defendant-appellant on the 4th day of May, may be withdrawn and that the statement hereto attached may be filed in its stead.

Chicago, June 11th, 1915.

RALPH ORWIG,
Of Solicitors for Complainant.
TAYLOR E. BROWN,
CLARENCE E. MEHLHOPE,
Solicitors for Defendant.

Endorsed: Filed June 24, 1915.

R. C. BROWN,
Clerk.

I.

CITATION

In Chancery.

UNITED STATES OF AMERICA,

TO GRINNELL WASHING MACHINE COMPANY, *Greeting:*

You are hereby cited and admonished to be and appear in the United States Circuit Court of Appeals for the Seventh Circuit, to be holden at the City of Chicago, in the State of Illinois, thirty (30) days after the date hereof, pursuant to an appeal which has been allowed by the District Court of the United States, for the Northern Division of the Southern District of Illinois, from its final decree, in a suit wherein E. E. Johnson Company is appellant and you are appellee, to show cause if any there be, why the decree rendered against the said appellant as in said appeal mentioned, should not be corrected and why speedy justice should not be done to the parties in that behalf.

Witness, the Honorable J. Otis Humphrey, judge of the District Court of the United States for the Northern Division of the Southern District of Illinois, this fourteenth day of April, in the year of our Lord nineteen hundred and fifteen.

J. OTIS HUMPHREY,
Judge.

II. Marshal's return on citation.

III. Endorsed, filed in the District Court on April 17, 1915.

IV. Pleas and proceedings before the Honorable J. Otis Humphrey, judge of the United States District

Court, for the Northern Division of the Southern District of Illinois, in a case lately pending in said court, at Peoria, Illinois, being designated "In Equity No. 20," wherein the Grinnell Washing Machine Company is complainant and E. E. Johnson Company, is defendant.

V. **Appearances:**

Orwig & Bair, Des Moines, Iowa.

Wm. V. Tefft, Esq., Peoria, Ill.,

Solicitors for complainant;

Taylor E. Brown, Esq., and

Clarence E. Mehlhope, Esq., Chicago, Ill.,

Solicitors for defendant.

VI. Be it remembered, that on the third day of March, A. D. 1914, a bill of complaint was filed by the Grinnell Washing Machine Company against E. E. Johnson Company, in said court at Peoria, Illinois, which cause was designated "In Equity No. 20" and which said bill of complaint is in words and figures as follows, to wit:

IN THE DISTRICT COURT OF THE UNITED STATES
FOR THE SOUTHERN DISTRICT OF ILLINOIS,
NORTHERN DIVISION.

Bill of
Complainant
Filed
Mar. 3.

Grinnell Washing Machine Company,	} In Equity No. 20
Complainant,	
vs.	
E. E. Johnson Company,	
Defendant.	

BILL OF COMPLAINT.

To the Honorable Judges of the District Court of the United States in and for the Southern District of Illinois, Northern Division, in Equity sitting:

The Grinnell Washing Machine Company, a corporation organized and existing under the laws of the State of South Dakota, having a domiciliary office at Pierre, South

1914

Dakota, and also having a place of business in the City of Grinnell, County of Poweshiek, in the State of Iowa, brings this, its bill of complaint against the E. E. Johnson Company, a corporation organized and existing under the laws of the State of Illinois and having its principal place of doing business at Peoria, County of Peoria, State of Illinois, and being a resident and citizen of said state, and of the Southern District of Illinois, Northern Division, and thereupon the complainant complains and shows unto your Honors:

1. That prior to January 15, 1909, William F. Phillips, then of Newton, Jasper county, Iowa, was the original, first and sole inventor of certain new and useful improvements in gearing devices, etc.;

2. That the said William F. Phillips made application on January 15, 1909, to the Commissioner of Patents, for letters-patent on said invention in accordance with the then existing laws of the United States, etc., and that on the 22nd day of February, 1910, letters-patent of the United States, No. 950,402, were duly issued to the said William F. Phillips, securing to him, his heirs, etc., for the period of seventeen years, the full and exclusive right of making, using and vending the said improvement, etc.;

3. That on or about the 13th day of December, 1909, said William F. Phillips, by an assignment in writing, sold and transferred to Thompson Brothers Company, a corporation of the State of South Dakota, the entire right, title and interest in his then pending application for letters-patent and any patent which might subsequently be issued thereon; that said assignment was duly recorded in the United States Patent Office on March 6, 1911, in Liber 1,86. page 284 of the Transfer of Patents; that by reason of certain informalities in said instrument of assignment a second instrument of assignment

was executed on January 2, 1913, whereby the said W. F. Phillips fully ratified the first assignment hereinbefore mentioned; and that thereafter, on February 29, 1912, the said Phillips executed and delivered to the said Grinnell Washing Maching Company another assignment in writing conveying all his rights in and to the said letters-patent No. 950,402 hereinbefore mentioned.

Filed
Mar. 3.

4. That each and every one of said assignments was made in an attempt to and for the purpose of conveying title in and to said patent and the invention covered thereby, to the assignees named in said assignment; that the corporation, said Thompson Brothers Company, subsequently, by due and proper proceedings, changed its corporate name to the Grinnell Washing Machine Company, on or about the 20th day of July, 1910.

5. That by virtue of said assignments, the said Grinnell Washing Machine Company is now the owner of all rights in and to said letters-patent No. 950,402.

6. That immediately after and at all times since becoming the owner of said letters-patent, the complainant has spent a great deal of time and effort and has invested large sums of money in the manufacture and production of gearing devices made in accordance with and under said letters-patent, etc.;

7. That the complainant has manufactured and sold large numbers of gearing devices embodying the said invention disclosed by said letters-patent, has realized large profits from manufacture, use and sale of said gearing devices and from the licensing of others to make, use and sell said gearing devices, and will so continue to make large profits if protected in its rights under said patent.

114 8. That the public generally has acquiesced in the validity of said letters-patent and that a number of the largest manufacturers of gearing devices of the class described in said letters-patent, have voluntarily entered into license contracts with the complainant and have acquired the right to manufacture and sell said gearing devices for washing machines and wringers under the protection of said letters-patent, among the manufacturers above mentioned being the following:

Blackstone Mfg. Co., Jamestown, N. Y.
Wayne Mfg. Co., Saint Louis, Missouri.
Thompson Brothers Co., Cincinnati, Ohio.
Automatic Electric Washer Co., Newton, Iowa.
One Minute Mfg. Co., Newton, Iowa.
The Maytag Company, Newton, Iowa.
Voss Brothers Mfg. Co., Davenport, Iowa.
Globe Mfg. Co., Perry, Iowa.

9. That the defendant, well knowing the premises and rights of the complainant, and contriving to injure the complainant and deprive it of the benefits and advantages which might otherwise have derived from said invention, did unlawfully, and prior to the beginning of this suit and in violation of complainant's right, in infringement of the claims of said patent, sell and use, and is now selling and using within the Southern District of Illinois, and elsewhere in the United States, the said gearing devices for washing machines and wringers made in accordance with and covered by said letters-patent, that it threatens to continue so to do, in defiance of the rights of complainant as aforesaid, to its great and irreparable loss and injury, etc.

10. That said defendant has sold large quantities of said gearing devices, has large quantities of same on hand for sale and has made and realized large profits

therefrom; that the conduct of defendant has the effect of and does encourage others to venture to infringe and disregard complainant's rights, and that complainant's damages amount to more than ten thousand (\$10,000) dollars.

11. That the complainant has caused actual notice to be given to said defendant of said infringement and of the rights of the complainant, and requested defendant to desist and refrain from said infringement, but that the defendant has disregarded said notice, has refused to desist and still continues to use and sell said gearing devices as aforesaid.

12. That since the complainant has commenced the manufacture and sale of gearing devices of the kind covered by said letters-patent, the defendant herein and others, have copied the same and are now engaged in the sale and use of said gearing devices.

13. That prior to the commencement of this suit, an action was brought by the complainant against O. B. Woodrow and others, Equity No. 107-M, in the District Court of the United States, for the Southern District of Iowa, Central Division, for the infringement of said letters-patent; that after testimony taken and argument at final hearing, on the 27th day of October, 1913, a final decree was entered, sustaining the validity of claims 5 to 8, inclusive, of said Phillips patent and holding the defendant's devices complained of to be infringements of said claims.

Forasmuch as the complainant can have no adequate relief, except in this court, etc., the complainant prays that defendant be required to make full, true, direct and perfect answer to the matters hereinbefore stated and

charged, an answer under oath being hereby expressly waived.

Complainant further prays that the defendant be decreed to account for and pay over the income or profits thus unlawfully derived from the violation of complainant's rights, and be restrained from any further violation of said rights; that a provisional injunction be issued restraining said infringement; that a writ of injunction be granted, issuing out of and under the seal of this Honorable court, perpetually enjoining and restraining the said defendant, its clerks, attorneys, etc., from any further sale or use of said patented improvement or any part thereof, and that the gearing devices now in the possession or use of defendant, in infringement of said letters-patent, may be destroyed or delivered up to the complainant for that purpose.

Complainant further prays that, upon the rendering of the decrees above prayed, the damages sustained by the complainant by reason of such infringement may be assessed, in addition to the profits to be accounted for by the defendant, and that the actual damages so assessed, may be increased to a sum equal to three times the amount of such assessment under the circumstances of the wilful and unjust infringement of said letters-patent as aforesaid; and that such other and further relief be granted this complainant as to this court may seem equitable in the premises.

Complainant further prays that a writ of subpoena of the United States of America, be granted, directed to said defendant, commanding it on a day certain to appear and answer unto this bill of complaint and to abide by and perform such order and decrees in the premises,

as to the court shall seem proper and required by the principles of equity and good conscience. Filed
Mar. 3

GRINNELL WASHING MACHINE COMPANY,

By (Signed) J. P. Lyman,

President.

(Verification by J. P. Lyman,
President of Grinnell Washing
Machine Co.)

(Endorsed: Filed March 3, 1914.)

VII. AMENDMENT TO BILL OF COMPLAINT.

"13-A. Complainant further shows unto your Honors that prior to the commencement of this suit, an action was brought by the complainant against the Newton Washing Machine Co. of Newton, Iowa, in the District Court of the United States for the Southern District of Iowa, Central Division, for infringement of said letters-patent, which action bore docket No. 16-A, Equity; that a large amount of testimony was taken in said cause; that the cause was finally argued at final hearing, and thereafter on the 2nd day of June, 1914, a final decree was entered sustaining the validity of claims 5 to 8, inclusive of the said Phillips patent hereinbefore mentioned and holding defendant's device complained of, to be an infringement of said claims." Amend
Bill of
Comp
June

VIII. And thereupon, the defendant filed its answer in words and figures as follows, to wit:

ANSWER.

The answer of E. E. Johnson Company, defendant, to the bill of complaint of the Grinnell Washing Company, complainant: Amend
Mar.

114 I. Admits defendant is a corporation of the State of Illinois, and that complainant, the Grinnell Washing Machine Company, has a place of business in the City of Grinnell, County of Poweshiek, State of Iowa, but calls for proof as to the organization and incorporation of the complainant, as alleged in the bill.

II. Denies the allegations of paragraph 1 of the bill; denies that said William F. Phillips was the first, true and sole inventor of said alleged improvements in gearing, prior to the 15th day of January, 1909, as described and claimed in letters-patent No. 950,402, and leaves complainant to make proof thereof.

III. Admits that letters-patent of the United States, No. 950,402, were issued and granted on the 22nd day of February, 1910, to said Phillips for alleged new and useful improvements in gearing devices, upon application filed on or about the 15th day of January, 1909, but denies that due and lawful proceedings were had, etc., and that said letters-patent were duly issued in accordance with the then existing laws of the United States, etc., and calls upon complainant to make strict proof thereof.

IV. Upon information and belief, denies each and every allegation of paragraph 3 of the bill, concerning the alleged assignment and transfer of title of said Phillips patent, and calls upon complainant to make proof thereof.

V. Denies each and every allegation with respect to the alleged change of name of Thompson Brothers Company as set forth in paragraph 4 of the bill and calls upon the complainant to make strict proof thereof.

VI. Denies that the complainant became and now is the exclusive and sole owner of all or any rights in and to said letters-patent No. 950,402, as set forth in paragraph 5 of the bill and leaves the complainant to make proof thereof.

VII. Denies each and every allegation of paragraphs 6 and 7 of the bill and leaves complainant to make proof thereof.

VIII. Denies that the public have generally acquiesced in the validity of said Phillips patent as set forth in paragraph 8 of the bill; denies that the complainant has already received large gains and profits as a result of the license contracts therein referred to, alleged to have been entered into between a number of large manufacturers and the complainant, and it leaves the complainant to make proof thereof.

IX. Denies that it contrived to injure the complainant and deprive the complainant of alleged profits and benefits which might or would accrue to the complainant from said Phillips invention; denies the allegations of paragraph 9 of the bill and calls upon complainant to make strict proof thereof.

X. Denies that it has sold "large quantities" of the gearing devices complained of in the bill, or that it has "large quantities" thereof on hand, or that any act or acts of this defendant were or are unlawful or had the effect of encouraging or inducing others to venture to infringe upon any lawful right of the complainant in the premises, and further specifically denies that any violation or alleged violation of any rights of complainant amount to more than ten thousand dollars (\$10,000); upon the contrary, avers and states the facts to be that

prior to the year 1913 it has not manufactured, sold or used any gearing device of the kind or character complained of; that it only handled one machine having a reversible wringer device during the said year 1913; that thus far during the year 1914, this defendant has handled only four washing machines having a reversible wringer device; that the total valuation of said five machines does not exceed the sum of three hundred dollars (\$300); that it does not manufacture these devices but purchases them from the White Lily Manufacturing Company, a corporation of Iowa, having its factory and office in Davenport, Iowa; and therefore denies the allegations set forth in paragraph ten (10) of said bill with respect to damages and calls the complainant to make proof thereof.

XI. This defendant shows that by reason of the premises this court has no jurisdiction of this cause of action in so far as the same is dependent upon the "amount involved," as alleged in said paragraph 10 of the bill, and prays that this objection may stand with the same force and effect as if taken by plea or other proper pleading and that this defendant be hence dismissed with its reasonable costs.

XII. This defendant further shows that it had no knowledge or notice of the letters-patent in suit or of any claim of the complainant of alleged infringement thereof, until within a few days prior to the filing of the bill of complaint herein; and therefore denies each and every allegation and averment as to notice set forth in paragraph 12 and calls upon complainant to make proof thereof.

XIII. This defendant denies that it has ever recognized the great or any value of the alleged invention of

said Phillips patent and that it has ever "copied the same," and therefore denies the allegations of said paragraph 12 of the bill.

XIV. This defendant admits that a decree for complainant was entered October 27, 1913, in a suit brought under said Phillips patent, in the case of *Grinnell Washing Machine Company v. O. B. Woodrow et al.*, in equity, No. 107-M, as alleged in the bill; but this defendant avers, upon information and belief, and so states the facts to be, that the defendants in said suit did not present a full and complete defense; that such defenses as were pleaded were not supported by all the proofs that were available for that purpose and were not fully prepared, briefed and argued to the court; that no appeal was taken from the decree rendered therein; that no accounting was had; that the expenses of conducting such defense as made in said cause was shared wholly or in part paid by several manufacturers including Voss Bros. Mfg. Co., Globe Mfg. Co. and One Minute Mfg. Co.; that said manufacturers immediately upon entering of said decree joined with the defendant in said suit in applying for licenses under the patent in suit; that licenses were issued to said defendant and said manufacturers, and by reason of the premises, the said litigation was in effect a moot case; wherefore said decree should have or be given no force or effect by reason of the rule of comity or otherwise, in determining the issues in the case at bar.

XV. This defendant avers that the said letters-patent No. 950,402 are null and void and of no force and effect whatever for each of the following reasons, to wit:

(a) Subject-matter claimed is and was not the proper or statutory subject of a patent;

(b) Description of alleged invention in the specification is not in such full, clear and concise terms as to enable any person skilled in the art to which it appertains to make and use the same;

(c) The alleged new and useful device was not the result of the exercise of the inventive faculties but was the necessary result of the application of ordinary knowledge and skill of the mechanic upon materials and mechanical elements and movements old and well known long prior to the date of the alleged invention of said Phillips;

(d) The subject-matter of said patent was not an invention, not an improvement in the art and not useful;

(e) The said Phillips actually abandoned the alleged invention or constructively abandoned the same by not applying for a patent on it during the time allowed by the statutes for such application to be made;

(f) The assembling together of the severally old and well known mechanical elements of the device of the Phillips patent was a mere aggregation to produce an old and well known result;

(g) The said Phillips surreptitiously or unjustly obtained the patent for that which was in fact originated by another person, who was using reasonable diligence in adapting and perfecting the same;

(h) For the purpose of deceiving the public, the description and specification filed in the Patent Office was made to cover less than the whole truth relevant to the alleged invention or more than was necessary to produce the desired effect;

(i) The claims of the patent are not clear and distinct;

(j) The patentee or the complainant or both have unreasonably delayed the filing in the United States Patent Office of a needed disclaimer.

(k) The subject-matter of the alleged invention was well known to and in use long prior to any supposed invention thereof by said Phillips, by the undermentioned persons at the places stated opposite their respective names; and

(l) The subject-matter of the alleged invention was illustrated and described in the undermentioned letters-patent and printed publications, to wit:

LIST OF PRIOR USERS.

George W. Lewis of Des Moines, Iowa, at Des Moines, Iowa and elsewhere.

Beecher W. Junk of Columbus, Ohio, at Columbus, Ohio, and elsewhere.

A. F. Victor of Davenport, Iowa, at Davenport, Iowa, and elsewhere.

White Lily Manufacturing Company of Davenport, Iowa, at Davenport, Iowa, and elsewhere.

The American Woodenware Manufacturing Company of Toledo, Ohio, at Toledo, Ohio, and elsewhere.

John Eden of Davenport, Iowa, at Davenport, Iowa, and elsewhere.

Peter T. Coffield of Dayton, Ohio, at Dayton, Ohio, and elsewhere.

Reuben D. Tittle of Springfield, Ohio, at Springfield, Ohio, and elsewhere.

J. H. Speas of Cazenovia, Illinois, at Cazenovia, Illinois, and elsewhere.

Lee S. Kapp of Bluffton, Indiana, at Bluffton, Indiana, and elsewhere.

LIST OF PRIOR PATENTS AND PUBLICATIONS.

Publications.

A printed publication entitled "507 Mechanical Movements" compiled by Henry T. Brown and copyrighted in 1868, the eighteenth edition of which was published in 1896 by Brown & Seward, 261 Broadway, New York City, N. Y.

British Patents.

<i>Number.</i>	<i>Patentee.</i>	<i>Date.</i>
1,557,	B. Greening,	July 12, 1855;
1,061,	B. Sagor, et al,	April 22, 1871;
2,393,	E. Taylor,	July 8, 1874;
14,624,	R. Varley et al,	July 2, 1898;
8,574,	A. E. Shoemsmith et al,	April 10, 1906;
1,350,	W. Shedlock	January 24, 1889;

United States Patents.

<i>Number.</i>	<i>Patentee.</i>	<i>Date.</i>
28,442,	R. Richardson,	May 22, 1860;
45,260,	G. F. McGlean,	November 29, 1864;
57,348,	J. R. Madison,	August 21, 1866;
119,845,	J. W. Hampton,	October 10, 1871;
132,239,	Thomas R. Bailey,	October 15, 1872;
160,288,	J. W. Simmons,	March 2, 1875;
237,762,	V. W. Mason,	February 15, 1881;
272,250,	T. Hawksworth,	" 13, 1883;
289,556,	E. Rein,	December 4, 1883;
322,212,	N. Thomas,	July 14, 1885;
360,150,	Gray,	March 27, 1887;
376,235,	Benjamin J. Contes,	January 10, 1888;
387,342,	J. Coulter,	August 7, 1888;
414,897,	P. F. Cole,	November 12, 1889;
431,636,	W. S. Whitman	July 8, 1890;
451,091,	G. M. Walker,	April 28, 1891;
453,653,	M. Morton,	June 9, 1891;
465,570,	F. E. Tremper,	December 22, 1891;
466,224,	F. Curtis, Jr.	December 29, 1891;
467,241,	J. Schroeder et al,	January 19, 1892;

538,018,	Etheridge & Waite	April 23, 1895;	Filed Mar.
567,005,	S. L. Rhinehart,	September 1, 1896;	
617,332,	J. L. Glazier,	January 10, 1899;	
646,477,	B. E. Twyford,	April 3, 1900;	
691,151,	C. M. Leech et al,	January 14, 1902;	
693,407,	C. S. Labofish,	February 18, 1902;	
699,185,	F. C. Kainer,	May 6, 1902;	
711,317,	E. L. Howe,	October 14, 1902;	
714,346,	J. F. White,	November 25, 1902;	
714,614,	S. Scognamillo	November 25, 1902;	
756,253,	W. C. Lott,	April 5, 1904;	
762,851,	Stocking & Mendenhall,	June 14, 1904;	
774,837,	E. H. Eshelman,	November 15, 1904;	
780,733,	A. M. Smith,	January 24, 1905;	
798,985,	J. F. Siems,	September 5, 1905;	
803,522,	J. P. Barnes,	October 31, 1905;	
812,903,	B. Tropp,	February 29, 1906;	
814,502,	J. Anderson,	March 6, 1906;	
830,865,	Van Vliet,	September 11, 1906;	
831,974,	F. Muller,	September 25, 1906;	
837,874,	S. McGranahan,	December 4, 1906;	
838,581,	E. Prouty,	December 18, 1906;	
839,914,	M. Wilson,	January 1, 1907;	
841,061,	F. Snow,	January 8, 1907;	
841,605,	T. J. Winans,	January 15, 1907;	
852,939,	F. E. Fairman,	May 7, 1907;	
861,022,	J. W. Dunmire,	July 23, 1907;	
863,120,	A. F. Victor,	August 13, 1907;	
866,776,	A. P. Crell,	September 24, 1907;	
877,087,	J. W. Kennedy,	January 21, 1908;	
898,132,	B. C. Otis et al,	September 8, 1908;	
900,832,	A. P. Crell,	October 13, 1908;	
918,934,	W. H. Voss,	April 20, 1909;	
921,195,	O. B. Woodrow,	May 11, 1909;	
930,706,	F. E. Thompson,	August 10, 1909;	
938,726,	R. D. Tittle,	November 2, 1909;	
1,010,705,	R. D. Tittle,	December 5, 1911;	
1,061,022,	J. H. Speas,	May 6, 1913;	
1,077,043,	E. W. Darrow,	October 28, 1913.	

XVI. This defendant shows that the machines herein complained of and which it has purchased from the White

914 Lily Manufacturing Company of Davenport, Iowa, are constructed in accordance with and embody the improvements and invention of Alexander F. Victor, described and claimed in United States Letters Patent No. 1,009,270, dated and issued to said White Lily Manufacturing Company on the 21st day of November, 1911, and that this defendant has the full right and license in law to sell and use the machines complained of without permission from or hindrance by the complainant.

XVII. This defendant, further answering, says it has not manufactured, sold or used, nor has it threatened to manufacture, sell or use any machine constructed according to or embodying any invention or improvement set forth, described, claimed, or patented to the complainant in any valid patent of the United States, that it has not infringed upon the letters-patent in suit or upon any lawful right of the complainant, that its actions in the matters complained of have not caused the complainant any loss, damage or injury, and therefore this defendant denies the complainant's right to any injunction, temporary or perpetual, or to any accounting for alleged damages, gains or profits, or to costs or to any relief whatsoever, and prays to be hence dismissed with its reasonable costs in this behalf most unjustly sustained.

And this defendant will ever pray.

E. E. JOHNSON COMPANY,

By TAYLOR E. BROWN,

Its Attorney-in-Fact.

TAYLOR E. BROWN,

CORRECTION: E. MEHLHOFF,

Solicitors and of Counsel.

(Endorsed: Filed March 19, 1914.)

IX. And afterwards, to wit: on June 13, 1914, the defendant, with leave of court first had and obtained, amends its answer in the following particulars, to wit:

Amend
Answer
June 1

1. By adding to Paragraph 15, sub-section (k) and to the list of prior users, the following names, to wit: Alva J. Fisher, Neal Hurley and Hurley Machine Company, all of Chicago, Illinois, at Chicago, Illinois.

2. By inserting in the answer, before Paragraph 15, a new paragraph as follows:

"15-B. Defendant further answering, says on information and belief, and so states the facts to be, that prior to the alleged invention of the said Phillips and prior to the filing by him of an application in the United States Patent Office, on the 15th day of January, 1909, for the alleged improvements in gearings set forth in said Letters-Patent No. 950,402, one Alva J. Fisher, of Chicago, Cook county, Illinois, made the alleged invention as set forth by the said Phillips and claimed by him in claims 5 to 8 inclusive of the said patent in suit No. 950,402, and that the said Phillips, seeking to appropriate the aforesaid invention or so much thereof as is embraced in the claims of his said letters-patent, unjustly and unlawfully filed in the Patent Office of the United States, an application therefor, falsely alleging himself to be the first, original and sole inventor thereof and thereafter unjustly obtained Letters-Patent No. 950,402 for that which was in fact invented by the said Alva J. Fisher, who was using reasonable diligence in adapting and perfecting his said invention."

X. And afterwards, said cause was set for trial at Springfield, Illinois, on Monday, the fifteenth day of June, 1914; and thereupon, to wit: on June 13, 1914, an order was entered, in words and figures as follows, to wit:

ORDER.

On motion of Taylor E. Brown, Esq., solicitor for defendant, supported by affidavit, leave is granted to file amendment to answer instanter, and leave to defendant to take depositions at Chicago, beginning Monday, June 15, 1914, relating to the prior use set up in the amendment to answer, the cause to remain on the trial calendar, and to proceed immediately at Springfield, upon the conclusion of taking of proofs at Chicago, Illinois.

June 13, 1914.

Enter.

HUMPHREY,
Judge.

XI. And afterwards, to wit: beginning on June 15 and ending on June 17, 1914, the depositions of Alva J. Fisher, Torris H. Alfreds, Louis Schmetzer and Frank E. Geisler were taken before Grace A. Southwell, notary public, at Chicago, Illinois, in pursuance of said order, which depositions appear hereinafter (printed pages 82 to 126, incl.).

XII. And afterwards, to wit: on the eighteenth day of June, 1914, at ten o'clock in the forenoon, said cause came on for trial in open court at Springfield, Illinois, before the Honorable J. Otis Humphrey, United States district judge, and thereupon the following proceedings were had:

The cause being called for trial on its merits, complainant's counsel called J. L. FELLOWS, who, having been duly sworn, testified:

Upon direct examination in answer to interrogatories by Mr. Orwig, complainant's counsel, as follows, to wit:

My name is J. L. Fellows; residence is 932 East street, Grinnell, Iowa; my occupation is secretary and treasurer of the Grinnell Washing Machine Co., and my age thirty-five (1); I have been connected with the Grinnell Washing Machine Co. and its predecessor in business, the Thompson Bros. Co., since the fall of 1908 (2); I have here one of the washing machines of the kind that are now being manufactured by our company (3):

"Q. 4. Please identify which one it is.

A. (Witness indicates first machine.)

By Mr. Orwig: The washing machine just referred to by the witness is offered as an exhibit and marked for purposes of identification, as 'Complainant's Exhibit No. 1, Complainant's Washing Machine.'"

Our company commenced the manufacture of machines of this kind in the fall of 1908 (5); the work was being done on the machine in September, 1908. The machines were on the market about November; I believe the first one was put out in December, I am not certain (6); this invention, or the device disclosed in that machine, was first explained to and understood by me shortly before the first of September, 1908—within a few days (7); I am acquainted with Mr. Wm. F. Phillips, the person to whom the patent here in suit was issued (8); I met Mr. Phillips about July, 1908 (9).

"Q. 10. What negotiations if any were made between Mr. Phillips and your company in connection with this washing machine invention?

By Mr. Mehlhope: I object to that question as it does not appear as to just what company you refer; I wish to know if it is the predecessor company or the complainant here?

By Mr. Orwig: Question withdrawn.

Q. 11. What negotiations if any were made between Mr. Phillips and the Grinnell Washing Machine Co., or its predecessor?

A. Mr. Phillips was one of the stockholders in the Thompson Bros. Co. and they were down to Grinnell, trying to sell some stock and get their business on a better basis. The negotiations we had with them were buying stock in their company, electing new officers and starting the manufacture of the machines in Grinnell.

By Mr. Orwig: Your Honor, I understand the defendants have admitted the incorporation of the complainant company. I would like to ask counsel whether you are willing to admit that the present corporation is the same corporation as the Thompson Bros. Co., that was incorporated in 1908. I have here the articles of incorporation and will put it in the record, if you prefer.

By the Court: Yes, put them in."

The paper you now hand to me is a copy of the articles of incorporation of the Thompson Bros. Co., and the certificate of amendment, changing the name of the company. The change of name is July 20, 1910. The articles of incorporation were signed up on the 17th day of February, 1908 (12); it is a certified copy (13); the Thompson Bros. Co. and the Grinnell Washing Machine Co. are the same corporation (14); the copy of a patent you hand me is patent No. 950,402, issued to W. F. Phillips, February 22, 1910 (15).

"Q. 16. And what is the invention covered by this patent?

By Mr. Mehlhope: I do not think the witness is competent to testify as to the invention.

By the Court: Let the patent go into the evidence. Deposited
J. L. F.

By Mr. Orwig: The articles of incorporation and the amendment as identified by the witness, and copy of the Phillips patent, are offered in this case as exhibits, and marked respectively 'Complainant's Exhibit No. 2, Articles of Incorporation and Amendment' and 'Complainant's Exhibit No. 3, Copy of the Phillips Patent in Suit.' " Exhibits
offered

The Grinnell Washing Machine Co. is the owner of the Phillips patent, Complainant's Exhibit No. 3 (17); this document you now hand me is an assignment of the patent to Thompson Bros. Co. made by Mr. Phillips. The assignment I drew up myself (18); it is a copy (19); I do not know where the original of this assignment is; I suppose it belongs to the Grinnell Washing Machine Co. and is in their vault (20).

"By Mr. Orwig: I will explain that the original document is in Judge McPherson's court, in the other suit."

I have compared this copy of the assignment with the original and it is an exact copy (21); I was present at the time and I saw Mr. Phillips sign the original of this assignment; I made out the assignment myself and he signed it. No one else was present when he signed it (22); after its organization and our company had started to build machines like Complainant's Exhibit No. 1, in order to introduce them on the market and have them adopted by the trade, we had to start on an educational campaign with the trade. The women did not appreciate what a power washing machine, built simple so they could run it, was, and we started out with our salesmen demonstrating largely in the State of Iowa. At that time we had only two salesmen. Our first two years of

manufacturing were largely taken up by demonstrating in stores and private homes. I had to do considerable of that myself (23); in the efforts of our company to establish a demand for machines of this kind, we had very good success; more than we had anticipated (24); at the time when our company was endeavoring to establish a demand and doing this educational work, there was no other machine on the market that I knew of, that had substantially the same sort of a gearing device, capable of accomplishing anything like the same sort of work. There were one or two machines shabbily built on a sort of a hand machine type, that did part of the work, but a very small part of it (25).

"Q. 26. How long was it after your machine made like Exhibit No. 1 was on the market, before your traveling men learned of other machines constructed substantially like it and doing substantially the same work as this machine?

By Mr. Mehlhope: I object to the question, as it does not appear that the complainant's machine was like this one here.

By Mr. Orwig: Q. 27. Please examine Complainant's Exhibit No. 1, and state whether or not that is constructed substantially like the machines that your company first started to manufacture in 1908; and state whether it is the same as disclosed by the Phillips patent in suit.

A. It is. There have been very few changes in that machine, to date. (Answering former question 26): In about a year, other machines started to show up."

In explaining the operation of machines like Complainant's Exhibit No. 1, I will operate the machine before the court.

In this machine you can put your ordinary washing of family size right in the tub to soak over night; in the

morning all you have to do is to raise this lid and start this, running the washing from the tub right through the wringer into a tub. You then put your wringer in a neutral position throw down your lid and start your machine, and the washing is done in the washing machine. As soon as the washing has been in there five to eight minutes, you raise the lid again, take your washing out and run it through the wringer into the blueing water. The advantage in that is because you can soak the clothes over night, wring them back through the wringer into the tub and begin with the washing. While this washing is going on, after you get the first batch into this tub, you can wring them out into the rinse water, put in another batch of clothes, start your machine and wring your clothes out of your rinse water, the same time the washing is going on, simply reversing the wringer and drip board and running the clothes through from the opposite direction. It means the advantage of about half the time used in doing the washing (28); the operation of the wringer part of the device, assuming that clothes are caught in the wringer rolls or a person's fingers are caught, is as follows:

The wringer can be run in either direction by simply changing the position of the clutch lever. If the clothes become tangled or the fingers get caught or entangled, the wringer can immediately be stopped or reversed (29); If clothes become caught in the wringer rolls, or if your hands get in there, you can stop the wringer immediately. If they are in so far that you cannot get them out without reversing the wringer, you can reverse the wringer and take them out. The clothes usually get wound around the rolls a little in

wringers that run one way and are apt to tear them so badly that you have to cut them, to get them off (30); with this machine it is not necessary to cut the clothes off of the wringer roll in order to untangle them (31); when the clothes become entangled, the wringer can be backed up or run forward a little at a time, until the clothes can be taken off; in other words, you can move it forward or backward just a trifle in order to get the clothes untangled (32); the controlling lever at the side of the wringer enables the operator to instantly stop, start or reverse the wringer and to hold the wringer in any one of these positions (33); when the machine is running the machine is thrown out of gear when the cover is raised; the gear wheel unmeshes so that the wringer shaft is still in operation; still connected (34); there is only one lever on this machine that needs to be operated by the washwoman during the entire operation of washing and wringing the clothes (35).

“By Mr. Orwig: Copy of the assignment referred to by the witness and identified by him is offered as an exhibit, marked for identification as ‘Complainant’s Exhibit No. 4, Phillips Assignment to Thompson Bros. Co.’”

The two pamphlets you hand me are copies of the Emerson Monthly, a trade paper gotten out by the Emerson Electric Manufacturing Co., St. Louis, Mo., manufacturers of motors. The date of one is November, 1909, and the other is July, 1910 (36).

“Q. 37. Is there a reference in this magazine to your company’s washing machine of the kind here in suit and also a reference to the defendant’s machine; if so please explain fully.

By Mr. Mehlhope: Objected to as immaterial.

By Mr. Orwig: This is advertising matter and I think the very question is put to the witness for bringing out the materiality of the question.

By the Court: He may answer.

By Mr. Mehlhope: Exception noted.

Page
J. L.

A. There is an advertisement on both machines, our machine and the White Lily machine. The advertisement is an ad that the Emerson people give to their customers; they usually fill in the advertising matter themselves and make it in the form of an editorial rather than an advertisement. The company is in the habit of doing this partly to help them get business on motors. The sales manager will come to you and say he would like to sell you some motors and at the same time agree to give you some advertising space in this magazine and that he will write it up. The article was called to my attention because usually the first thing a person does is to get that advertising, for it is good advertising and free advertising. I brought these because of the very similar reading of the advertising matter.

Q. 38. Please read into the record the printed matter connected with the description of your own machine, and also of the White Lily machine.

By Mr. Mehlhope: I object—I do not see that this is at all material—something written in a paper years ago, in an advertising way.

By the Court: He may answer.

By Mr. Mehlhope: Exception.

A. I am reading the White Lily advertisement of July, 1910. It shows a cut of the machine and is entitled 'White Lily Electric Family Washing Machine.' 'The machine shown herewith is,' the manufacturer states, 'a low priced, but simple and portable family washer, capable of operation at a cost for electricity not to exceed 2 cents an hour. It is made by the White Lily Manufacturing Co. of Davenport, Iowa, and Toledo, Ohio. The White Lily washers are equipped with special Emerson alternating and direct current motors, which are guaranteed to start the washer and wringer under a dead load. The equipment it is said is of ample power to wash the clothes with the tub full. The machine is equipped with a reversible power operated wringer, which may be started in either

direction or stopped instantly by a touch of the lever placed conveniently to the hand of the operator. It is claimed that the reversible feature is of great importance as preventing damage to fabrics not properly started through the wringer. The manufacturer states that the White Lily machine is designed especially for power operation and with especial regard to the designing of the wringer.'

The similar advertisement of the 'Elmo' or Grinnell washer, complainant's machine, is entitled 'Elmo Washing Machine' and there is a cut of the machine. 'The motor operated family washing machine shown in the above engraving is made by Thompson Bros. Co. of Grinnell, Iowa, and furnished complete by them with the Emerson alternating or direct current motor of one-eighth horse power. The Elmo washer, the manufacturer states, is constructed to insure a simple, easy motion, with but little strain on the motor. Its few parts insure long wear and less liability to get out of order. All gears are enclosed, limiting the chance for injury to the fingers or clothes. The wringer is bolted solidly to the tub, and is of improved type with closed gears. It is said the washer is the best that can be had and in fact the wringer has no superior on the market today. The Elmo washer is said to embody several special advantages; the lid may easily be raised or closed without removing any parts of the machinery or turning off the current. In raising the lid, the gears are automatically disconnected, stopping the washer. The Elmo washer has the advantage of being equipped with a reversible wringer, working both backwards and forwards, being of great value when small articles become entangled in the rolls, and it becomes necessary to remove them.

By Mr. Mehlhope: I wish to make a motion that the answer be stricken from the record; it is immaterial and incompetent to prove anything in this case.

By the Court: The only thing which appears to me to be material is the statement that the wringer is reversible. I do not know to what extent that may be important, but I will let it stand for the present.

By Mr. Mehlhope: Exception.

Q. 39. I now hand you some circulars bearing title of the White Lily Manufacturing Co., and ask you to state if you know what they are.

A. They are circulars put out by the White Lily Manufacturing Co., for advertising purposes.

By Mr. Orwig: The two copies of the Emerson Monthly referred to by the witness are offered as exhibits and marked for identification as 'Complainant's Exhibits No. 5 and No. 6, Emerson Publications,' and the circulars just identified by the witness are offered as exhibits and marked for identification as 'Complainant's Exhibits 7 and 8, circulars of the White Lily Manufacturing Co.'

By Mr. Mehlhope: I make the same objections to the introduction of the Emerson Monthly as an exhibit, as I have to question 38.

By the Court: Objection overruled.

By Mr. Mehlhope: Exception.

Q. 40. Is there one of the defendant's machines here in the room?

A. Yes, sir; I presume it is, it looks like it.

Q. 41. Please identify it.

A. It is the machine on the end there.

By Mr. Orwig: The machine just pointed to by the witness is offered as an exhibit in this case and marked for identification as 'Complainant's Exhibit No. 9, Defendant's Infringing Machine.'

STIPULATION.

The machine just identified as Complainant's Exhibit No. 9, is stipulated by and between counsel to be the machine manufactured by the White Lily Manufacturing Co., and of the kind that have been sold by the defendant in this case, prior to the commencement of this suit and subsequent to the issuance of the Phillips patent here in suit.

Q. 42. I notice there are two other washing machines here in the room and I ask you to state if you know what they are?

A. The machine bearing the mark of the Newton Washing Machine Co. is one manufactured by the Newton Washing Machine Co., of Newton, Iowa, and the one bearing the name Automatic Electric Washer and Wringer is one manufactured by the Automatic Electric Manufacturing Co.—I believe their full title is—at Newton, Iowa.”

Our company has been engaged in litigation in connection with the two machines just referred to; we have had suits with both the Newton Washing Machine Co. and the Automatic Electric Manufacturing Company (43); those suits were based on machines like those before us here (44).

“By Mr. Orwig: The machine identified by the witness, marked Automatic Electric Washer and Wringer, is offered as an exhibit in this case and marked ‘Complainant’s Exhibit No. 10, Automatic Electric Washing Machine.’ The other exhibit bearing name of the Newton Washing Machine Co. is offered as an exhibit and marked ‘Complainant’s Exhibit No. 11, Newton Washing Machine.’

The complainant hereby offers in evidence as an exhibit, a certified copy of the answer and the decree in the case of the Grinnell Washing Machine Co., complainant, *vs.* O. B. Woodrow and others, defendants, in which this same Phillips patent was involved.

Complainant also offers in evidence a certified copy of the answer of the Newton Washing Machine Co., and the decree of the court, in the case of Grinnell Washing Machine Co. *vs.* Newton Washing Machine Co., and marked respectively for identification as ‘Complainant’s Exhibit No. 12, Answer and Decree in Woodrow Case’ and ‘Exhibit No. 13, Answer and Decree in Newton case.’”

Direct examination closed.

Cross-Examination of J. L. Fellows, by Mr. Mehlhope. D.T.
J.T.

I stated this Phillips machine was first explained to me in the fall of 1908, by Mr. Phillips (X-Q. 45); by Mr. Phillips himself (X-Q. 46); Thompson Brothers were two brothers that were interested in the Thompson Bros. Co. and the company was named for them (47); this company formed about February, 1908 (X-Q. 48); I do not know what was the business of the Thompson Brothers before they organized this company (X-Q. 49); they were not mechanics by trade; I would rather call them promoters, traveling men, I believe (X-Q. 50).

"X-Q. 51. Was a machine like this machine made under the Phillips patent, the first power washing machine that Phillips put out?"

A. Before coming to Grinnell, they had a motor on some of their hand machines, but they never put them out after they came to Grinnell."

They came to Grinnell in August, 1908, when they closed the deal. They came in July, I should say, or a couple of months leading up to that time (X-Q. 52); Phillips came into the company—Phillips was down there with Thompson at about the last meeting (X-Q. 53); that was in August, 1908 (X-Q. 54).

"X-Q. 55. Had he developed his machine at that time?"

A. He had made one—he said he was working on one. I did not see a machine until he made it in our shop."

It was shortly before September 1st when I first saw it. I remember that date because I have had occasion to look it up quite a number of times (X-Q. 56); was not disclosed to me by a drawing; it was disclosed by model—a machine the same size as that (X-Q. 57); Phillips had not developed this machine before he came to

Grinnell, not that I know of (X-Q. 58); Phillips came to Grinnell the latter part of August, but I could not tell you exactly the date—shortly before September (X-Q. 59); Mr. Lewis of our factory helped him on this machine, I believe Lewis was head mechanic and Phillips was working on this machine. I presume he had him make gear wheels for him, but I do not know positively. Phillips was doing most of it (X-Q. 60).

“X-Q. 61. You say Phillips was a mechanic?

A. Well, yes—”

The names of the Thompson brothers are John Thompson and Frank Thompson (X-Q. 62); and the name of Lewis is George W. Lewis (X-Q. 63); there was a man by the name of John Hume (X-Q. 64); I have heard of him (X-Q. 65); I do not know if he worked for the Thompson Bros. before coming to Grinnell. I am inclined to think he did some machine work in Des Moines (X-Q. 66).

“X-Q. 67. Now, this power washing machine that was sold before Phillips got up his reverse wringer machine, can you point out on this exhibit before you, Complainant’s No. 1, what if any parts of that prior machine are like this machine?

By Mr. Orwig: I object to the form of the question; there is no evidence that a power driven washing machine had been sold.

A. It was a hand machine with a motor that had been sold.

By Mr. Mehlhope: Question withdrawn.

X-Q. 68. What was the name of this prior power machine?

A. It was a hand machine; I think they bought ten motors and sold probably four or five motors along with hand machines, that could be attached. The name of the machine was the ‘Speed.’

X-Q. 69. Now can you point out on Complainant’s Exhibit No. 1, what parts if any of Defendant’s Exhibit No. 1 this ‘Speed’ machine had?

A. The speed machine they brought down there ^{part} was discontinued very shortly after they came?

X-Q. 70. That is not answering my question?

A. The only part I remember was the rack and the rack bar and the dolly shaft.

X-Q. 71. Please point out by number the parts the other machine had?

A. Well, 48, 47 and 41.

X-Q. 72. Is that all?

A. Yes.

X-Q. 73. How about this shaft marked '15'; did the former machine have that shaft?

A. That is a shaft running across here.

X-Q. 74. Was there a fly wheel like this?

A. No, sir; there was a fly wheel but the wheel was a great big wheel, geared into the fly wheel.

X-Q. 75. You mean this fly wheel 20 was present but it had a large pinion on its hub?

A. There was a fly wheel on the hand machine—

X-Q. 76. Was it large or small, what was the difference?

A. It was about the same size.

X-Q. 77. How did the fly wheel 20 drive the shaft 15?

A. There is a big gear wheel, I presume it was connected in some way to mesh with the fly wheel.

X-Q. 78. There was a gear 16, except that it was larger?

A. I do not know.

X-Q. 79. It was there for the same purpose as this No. 16?

A. It was there for a speed gear purpose.

X-Q. 80. In that former machine, then, there was this fly wheel 20 and there was some kind of speed reducing gearing between that fly wheel and a shaft like this shaft 15 for driving the shaft from the fly wheel?

A. That is correct.

X-Q. 81. Where was the motor on this machine?

A. I never saw one equipped with a motor.

X-Q. 82. You know that they were equipped and sold with a motor?

A. I heard they were.

X-Q. 83. What sort of connection was there between the drive shaft 15 and the parts 47 and 48 which you say were the same in the 'Speed' machine?

A. I do not remember. We did not make the machines at all; they brought it down there and abandoned it, and the only—

X-Q. 84. Do you recall whether in the other 'Speed' machine, when you opened the lid, you would disengage the driving mechanism of the dolly from the drive shaft 15?

A. I do not think we did; I could not say positively. I think they had to take off something before they could get into the machine; I am not positive about that construction.

X-Q. 85. So far as you know, it may have been just like this?

A. It was not like that; I am positive of that.

X-Q. 86. Where was the wringer in that machine?

A. There was no wringer."

I do not remember that either of the Thompsons ever spoke to me about a reversible wringer on a washing machine, or I guess they did, because Mr. Thompson told me at one time that he thought somebody was trying to steal his wringer (X-Q. 87); that was the first time he spoke to me about the wringer (X-Q. 88).

"X-Q. 89. Who, in the Grinnell Co. first suggested this power driven reversible wringer on a washing machine?

A. Mr. Phillips was the first I ever heard say anything about it.

X-Q. 90. Was it not a fact that one of the Thompsons suggested to you or to Phillips, if they could equip the washing machine they had on the market then with a reversing device, they would have a good salable proposition?

A. No, sir."

Thompson Brothers were traveling salesmen (X-Q. 91); they got out among the trade pretty well and tried to sell that first kind of washing machine (X-Q. 92); that is the washing machine without the reverse wringer (X-Q. 93); it may be natural that they should be the first to suggest a reverse wringer with the washing machine, but if you knew Mr. Thompson you would not think much of that (X-Q. 94); I do not remember Thompson speaking of a reverse mechanism until after I saw Phillips making the machine, though I heard talk among the stockholders about Phillips making a machine and I went up to see it (X-Q. 95; I do not know that all hand machines were provided with wringers at that time—there is a place there for a wringer (X-Q. 96); this paper purporting to be a copy of the assignment from Phillips to Thompson Bros. Co. I drew this myself (X-Q. 97); it was not filled out in full when Phillips signed it (X-Q. 98); it was not simply a blank when he signed it. It was made up without the number of the patent, but Mr. Phillips wanted to catch a train, and so as to get it out of the way, we left it blank and filled it in (X-Q. 99); of the two numbers in the body of this assignment; I am referring to the number of the patent (X-Q. 100); that is No. 950,402 (X-Q. 101); I do not know that the date was in the instrument when it was signed (X-Q. 102); the date of filing and the serial number was put in when he signed it (X-Q. 103).

“X-Q. 104. So there was nothing in this assignment when he signed it to identify it with any patent whatever, except his name?

A. Well, Phillips assigned the patent and I made out the assignment the best I knew how, and he signed it. Later I told him the assignment was not in good shape and I asked him if he would not sign

one that was made out right and he said he would. I think he signed one that Col. Brown made out.

X-Q. 105. Where is that assignment?

A. I do not know whether it is in court or whether it is with the Grinnell Washing Machine Co.

X-Q. 106. Well, this paper we have been talking about gives the date of the patent February 22, 1910, and you said that Phillips did not know the number then. It is executed on the 13th of December, 1909; it would have been impossible for you or Phillips to know the number because the patent was issued after it was drawn up.

A. I expect so.

By Mr. Mehlhope: We object to this assignment as incompetent to prove anything in this case.

By the Court: Hold your objection.

By Mr. Mehlhope: Exception."

The case of Grinnell *vs.* Automatic Co. was not appealed (X-Q. 107); it was not any great while after the decision by Judge McPherson the matter was settled. They came down to see us shortly afterwards; I don't remember just how long it was, and we told them to bring the rest of their crowd that were helping them to pay for the defense and we would talk settlement, and we went to Chicago on an appointment by them and met with them and they agreed to sign license contracts and pay back royalties, and we sort of compromised on back royalties and they paid a lump sum on that, and agreed to sign the license contract. I think the whole matter took about two or three weeks after they first came to see us. I do not remember how long after the decision of Judge McPherson (X-Q. 108); neither I nor our attorney approached the other side first for a settlement (X-Q. 109); our attorney did not—not to my knowledge, or with my consent (X-Q. 110); this license is drawn with a royalty (X-Q. 111); they paid us \$1,500 back royalties

and they paid close to \$5,000 this year (X-Q. 112); to arrive at these figures, I get them off of the monthly reports (X-Q. 113).

Cross-examination closed.

Redirect Examination by Mr. Orwig.

"RD-Q. 114. In cross-examination you were asked in regard to a subsequent assignment of this Phillips patent. Why was that subsequent assignment made, do you know?

A. Why, on account of errors in the original assignment. The word 'Iowa' was used instead of 'South Dakota'; 'Corporation of Iowa' that was corrected, and a regular form of assignment gotten up.

RD-Q. 115. I now hand you an instrument in writing and ask you to state what it is.

A. It appears to be a copy of the assignment made by Phillips, which was made later—later than the one I referred to, with the patent number in and in regular form.

RD-Q. 116. When was that made?

A. February 9, 1912.

RD-Q. 117. Have you compared that copy with the original?

A. Yes, sir.

RD-Q. 118. Where is the original?

A. I think it is in court somewhere.

By Mr. Orwig: Copy of the assignment as identified by the witness is offered as an exhibit and marked 'Complainant's Exhibit 14, Phillips Second Assignment.'"

Examination closed. Witness dismissed.

Direct examination of JOHN HOWARD McELROY, by
Mr. Orwig:

I am John Howard McElroy; age, forty-seven years; residence, Chicago, Illinois; occupation, solicitor of patents and mechanical expert in patent causes (1).

I had the ordinary college education, after which I studied engineering in the University of Illinois. After that, in 1891, I entered the examining corps of the United States Patent Office, where I remained until 1896, when I resigned and went to Chicago to begin the practice of my profession. As an examiner in the Patent Office, my work was concerned exclusively with the comparison of structures for which patents were sought, with the other similar structures of the prior art, and the determination of whether or not the claims submitted as defining the novel structure, were patentable.

My work as a patent solicitor has necessitated the preparation of a large number of applications for patents in this and other countries, and the comparison of the structures sought to be patented, with the structures representing the prior art.

I have been frequently called upon for my opinion as to whether certain structures submitted were properly patentably novel in view of other structures submitted as representing the prior art and also as to whether certain claims of certain patents submitted were properly valid and if valid, whether they could properly be construed as covering other structures submitted. Each year, since going to Chicago in 1896, I have testified as a mechanical expert in a number of patent causes,

pending in this and other circuits throughout the United States and for the last ten years my time has been mostly given up to the preparation for and giving of expert testimony in patent causes (2).

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For the last fifteen years I have been soliciting patents for a rather active inventor in this art and have conducted interferences for him and given him opinions as to infringement, etc., so that I have considerable knowledge from that one source. I have also testified as a patent expert in probably a dozen cases in which washing machine patents were involved. With regard to the particular patent here in controversy, the Phillips patent No. 950,402, I testified as an expert for the complainant in both the prior suits—one against the company making the Automatic Electric Washer and Wringer, and the other against the Newton Washing Machine Company (3).

I have read and understand the patent to Wm. F. Phillips, No. 950,402, granted February 22, 1910, for improvements in gearing device, and have examined and understand the gearing device for washing machines and wringers, as exemplified by Complainant's Exhibit No. 1, Complainant's Washing Machine. Complainant's Exhibit No. 1 correctly exemplifies the structure disclosed in the patent in suit, and claims 5 to 8 inclusive (4-6).

(Q. 7.) As set out in the second paragraph of the specification of the patent in suit, the object of this invention is "to provide a gearing device of simple, durable and inexpensive construction, especially designed for use in operating washing machines and wringers, by means of power applied by an electric motor or other source of power." The particular type of washing machines for

which this gearing was invented and to which it is applied, is what is known in the art as the "dolly" type of machine.

In the dolly type of machine, there is a tub 10, on which is hinged a cover or lid 11, journaled in this cover is a vertical shaft 45, known as the dolly shaft; mounted to slide up and down on this dolly shaft is the dolly, which consists of a block of wood with three or four pins projecting downward, so that when the lid is down, the pins extending downward from the dolly stick down into the clothes which are placed in the water in the tub. Now, when the machine is operated, the dolly shaft and with it the dolly, is swung back and forth through a distance of say 180 to 270 degrees—that is to say, one-half of a full turn to three-quarters of a full turn. These tubs, as you will find by an examination of the interior, are ribbed on the bottom and on the sides, and the action of the dolly in swinging the clothes back and forth over these ribs is somewhat like that of a woman doing a washing with the old fashioned wash board, where the clothes were held in the hands and rubbed up and down over the ribs or corrugations in the wash board, but of course here the washing is done by power instead of by hand.

After the washing is done, the soapy water has to be squeezed out of the clothes that have been washed, and for this purpose the wringer is mounted on the side of the tub and the wringer consists of two rolls that rotate toward each other and carry the clothes, which may be inserted between the wringers, passed through the wringers and out on the other side and into another tub which contains the rinse water, so as to rinse out the soap that may be left; and frequently in washing, they soak the

clothes over night before they are put into the washtub and in that case, the tub or other receptacle with the clothes in soak is brought up to the side of the wringer and the wringer is operated in the opposite direction, to carry the clothes from the tub in which they soaked, through the wringers and into the washtub, having the hot, soapy water in it, preparatory to washing, so that it is essential in the proper use of these machines, that the wringer rolls run in both directions.

In the power machines, the most common power used is a small electric motor. In the case of the machine of the patent in suit, this motor 23 is fastened on the bottom of the tub and the armature shaft of the motor is secured onto a small pulley 22 which is connected by a belt 21 with a balance wheel 20, which is journaled on a stub shaft supported from the bracket 13. This large pulley wheel or belt wheel has secured on the hub a small spur gear pinion 17 which meshes with a large spur gear wheel 16, which is secured on the outer end of the horizontal power shaft 15, which is journaled in two bearings 14, projecting upward from the bracket or bearing 13. Now, when the motor is running, as is always the case when the machine is being used, it runs continuously in one direction and the train of gearing which I have described keeps the power shaft 15 running always in the same direction at an average slower rate of speed than the armature shaft of the motor. Now, this power shaft must do two things; so far as the washing is concerned, it must swing or rotate this vertical dolly shaft back and forth through the half or three-quarters of a full turn, continuously from the rotation of the drive shaft 15, always in the same direction. In other words, it is a special form on an automatically operated revers-

ing gearing, and the special form shown in this patent consists of a spur gear pinion 40, secured on the shaft 15, which meshes with a larger spur gear wheel 44, secured on the shaft 43, journaled in bearings 42. This spur gear wheel 44 carries an eccentric gear which is connected by a pitman 48 with a pin on the horizontal reciprocating rack bar 47. This rack bar is continuously in mesh with a spur gear pinion 46, rigidly secured on the top of the dolly shaft, so that as the power shaft is continuously rotated in one direction, the dolly shaft 45 is swung back and forth in alternate directions and I might say that in this dolly type of machine, it seems to be substantially essential that the dolly shaft shall have that rotation of somewhere between one-half and three-quarters of a complete turn before it reverses every time.

Now, there must also be from this power shaft 15 a train of gearing to the wringer rolls and in the specific construction shown in this Phillips patent, the end of the power shaft 15—the inner end—has secured on it a small bevel gear 15^a which meshes with two mitre gears 26 and 27 which are loosely mounted on a shaft 24 which extends at right angles to the power shaft but in the same vertical plane. The shaft 24 has splined on it, that is to say, secured on it so it can slide back and forth on the shaft, but must always rotate with the shaft, a clutch sleeve 30 which has on its ends clutch teeth shaped to be engaged with similar clutch teeth, on the inner ends of the hubs of the mitre gears 26 and 27. Of course, this clutch sleeve is engaged with only one of these mitre gears at a time, and if it engages with one mitre gear, the wringer rolls are rotated in one direction; if it engages with the other, the wringer rolls are rotated in

the opposite direction, so that all you have to do to reverse the direction of the rotation of the wringer rolls is to shift this clutch sleeve from engagement with the mitre gear 26 into engagement with the mitre gear 27, and to do this shifting, there is an operating handle 34 provided, that extends across the machine beneath the wringer to a position where it can be readily operated by the person doing the washing, as she stands in front of the tub in a position to lift the garments out one by one and stick them between the rolls as they are drawn through. If the garments are being run from the tub, and the garments should stick, or if she accidentally caught her fingers, the operator would simply shift the handle 34 into the opposite position or into an intermediate position, so as to stop the revolution of the rolls in that direction and cause them to rotate in the other direction, so as to feed the clothes or garments back toward the tub. This handle 34 is secured on the end of a rock shaft 32 which has an upwardly projecting arm 33 that fits into an annular groove 30, into the clutch sleeve 39, so that as you swing the handle, the clutch sleeve is moved from one position to another. There are three positions in which the clutch sleeve may stand: a neutral position in which the clutch is not in engagement with either of the mitre gears 26 and 27 and in this position the wringer rolls will be at rest in spite of the fact that the motor is running and the shaft 15 is rotating. There is a notch 35 with which the handle 34 co-operates and this segment has three notches in it, and when the wringer rolls are at rest, the handle is in the center of the notches. If the handle is swung into the topmost of the three notches, the wringer rolls will rotate in one direction; if it is swung down into engagement with the lowermost of

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the three notches, the wringer rolls rotate in the opposite direction.

I should have explained the connections between the shaft 24 and the shaft 39, on which the wringer roll is secured. These connections consist of a sprocket pinion 36 secured on the outer end of the shaft 24, connected by a sprocket chain 37 with a large sprocket wheel 38 secured on the outer end of the shaft 39.

This completes the general description of the mechanism and I will refer, for instance, to claim 6, to show how this mechanism is defined in the claim.

The structure is defined at the beginning of the claim as "a gearing device of the class described," and the claim then goes on to define the various elements or rather to enumerate the various elements going to make up the combination in the claim and the first of these elements is "a support." This support is the tub 10 and the lid 11, pivoted on the tub. The next element is "a power shaft mounted on the support"; that element is the continuously rotating power shaft 15.

The next element of the claim is "means for imparting a continuous rotary motion to the power shaft," which of course would be the motor 23 which is connected up by the operating pinion 22 and the belt 21 with the large belt wheel 20, which is connected by the spur gear pinion 17 with the spur gear wheel 16, secured on the outer end of the power shaft 15.

The next element is "an upright shaft 45 mounted in the support"; this upright shaft 45 is the dolly shaft which is vertical—that is to say—upright, and is journaled in the lid 11, which is thus denominated as a part of the support set out in the first element of the claim.

The next element is "a driving device for the upright shaft, operatively connected with the power shaft and capable of imparting an alternating rotary motion to the upright shaft." This of course is the train of gearing between the horizontal shaft 45 which I pointed out as consisting of the spur gear pinion 40, meshing with the spur gear wheel 44, connected by the pitman 48 with the rack bar 47, meshing with the spur gear pinion 46 secured on the upper end of the dolly shaft, and as will be seen by rotating the power shaft here, these connections serve to impart "an alternating rotary motion to the upright shaft."

The next element of the claim is "a horizontal shaft 39"; this horizontal shaft 39 is the shaft on which the lower wringer roll is secured.

The next element of the claim is "a driving mechanism for the shaft 39, connected with the power shaft and capable of imparting a rotary motion to the shaft 39." That of course has reference to the connections between the horizontal power shaft 15 and the wringer shaft 39, and those connections include the mitre gear 15^a, meshing with the mitre gears 26 and 27, one of which is clutched through the sleeve 29, with the shaft 24, having the sprocket pinions 36 on its outer end, connected by the sprocket chain 37, with the sprocket wheel 38 on the outer end of the shaft 39.

The next element of the claim is "a controlling means applied to the driving device for the shaft 39, for reversing the movement thereof, and also for operatively disconnecting the shaft 39 from the driving shaft." The controlling means may be said to begin with the handle 34 by which they are operated, and include the rock shaft 32 on which the handle is secured, which has the arm 33

engaging the annular groove 30 in the clutch sleeve 29, so that by swinging the handle, the clutch sleeve can be moved into any one of the three positions mentioned, one of which causes the wringer rolls to rotate in one direction, the intermediate position of which causes the rolls to be held from operation, that is to say, to be operatively disconnected from the drive shaft, and the third position of which causes the wringer rolls to rotate in the opposite direction from the first mentioned rotation.

I think it is unnecessary to go into the details of the other claims. I will say that claim 5 is substantially the same as claim 6, except that it does not contain the final limitation that the controlling means shall be "also for operatively disconnecting the shaft 39 from the driving shaft." That is to say, claim 5 would be satisfied by this structure if this clutch sleeve could be held in only two positions—one in the position to rotate the rolls in one direction and the other to rotate them in the opposite direction, and without the possibility of the wringer being held in a stopped position.

Claim 7 is like claim 5, except that it brings in specifically, the element of "a hand lever for adjusting said controlling means." That hand lever of course is the lever 34, in position so that the woman operating the machine from her position in front of the machine, can manipulate that handle to stop or start, or reverse the wringer.

Claim 8 is like claim 5, except that it brings in the motor 23 or some equivalent mechanism possibly, it being described as "a prime mover carried by the support, for imparting a continuous rotary motion to the power shaft."

I believe that completes the explanation of the structure and the elements called for by the claims.

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John
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Q. 8. Please compare this Complainant's Exhibit No. 1 with the disclosures in the drawings and specification of the Phillips patent in suit, and also compare such structure with claims 5 to 8, inclusive, of the Phillips patent in suit.

A. (Q. 8) Comparing Complainant's Exhibit No. 1 with Phillips patent, and claims 5 to 8, thereof, I do not think it is necessary to go into matter in detail. The machine illustrated in Complainant's Exhibit No. 1 is precisely the same machine that is shown in the patent, and whatever I have said about the operation of the structure in the patent, and the application of the claims of the patent to that structure, applies just the same to the machine of Exhibit No. 1.

(Q. 9) I have studied and am familiar with the defendant's machine here before me.

(Q. 10.) It will be perfectly obvious that defendant's machine is a washing machine of precisely the same type, i. e. a dolly type of washing machine, as the machine of the patent in suit. You have the same tub, ribbed at the bottom and on the sides, and you have the same lid 11 hinged to one side, and you have the same vertical dolly shaft 45 which is journaled in the lid and is provided with the same dolly head, adapted to slide up and down on the shaft and to engage with the clothes as the machine is operated. I might say that in using these reference numerals, I am referring to the reference numerals which I have placed on drawings illustrating the defendant's machine. You will also find a small electric motor 23 mounted beneath the tub in the

same position as on the machine of the patent in suit and there is a belt 21 connecting a small pulley 22 on the armature shaft of the motor 23, with the large belt wheel 20; by rotating this large wheel slowly and watching the dolly shaft 45, you will see that the dolly shaft is swung back and forth through an angle of somewhere between 180 and 240 degrees; that is to say, somewhere between one-half and three-quarters of a turn between each reversal, and this is the same amount of rotation as is given to the dolly shaft in the machine of the patent in suit, so that we have the same sort of gearing, in its function and general mode of operation, between the belt wheel and the dolly shaft, that we have in the machine of the patent in suit.

At the front of the machine, there is a handle 34 which stands in one of three positions. When it is in its vertical position, the wringer rolls are not operated. When it is thrown down in one direction, the wringer rolls operate in one direction; when it is thrown over into the opposite position, the wringer rolls operate in the opposite direction, as the belt wheel is rotated, so that we have in this machine the same general type of connections between the belt wheel and the wringer rolls, that we have in the patent in suit, that is to say, connections such that as the belt wheel is rotated continuously in one direction by the motor, the wringer rolls may be caused to stand still or rotate in one direction or rotate in the other direction, just as the necessities of the washing operation require.

I have pointed out the existence of the same general train of gears in the two machines and I will now take up say claim 6, and point out the specific elements going to make up the various elements.

Of course it will be perfectly apparent that this defendant's machine has "a gearing device of the class described"; that is, a gearing for the dolly shaft and the wringer rolls of this type of a washing machine. It undoubtedly has the first element, "A support," in the tub 10 and the lid 11, pivotally mounted on the tub so that it may be opened or closed as is necessary. It has the second element, "a power shaft mounted on the support" or the equivalent of it, in the hub 15 of the belt wheel and the associated hub of the spur gear pinion 40, which is rigidly secured to the belt wheel and in the hub of the mitre gear 15^a which is also rigidly connected with the spur gear wheel 30. In other words you have in this construction the hubs of three wheels—the belt wheel, the spur gear wheel 40 and the mitre gear 15^a, made into one element to serve the purpose of the driving shaft of the structure of the patent in suit. That sleeve or hollow shaft 15 in defendant's machine is journaled on the bearing stub 14 so that the belt wheel with the connected spur gear wheel 40 and the connecting mitre gear 15^a is free to rotate as the motor is operated.

This defendant's machine also has the third element, "means for imparting a continuous rotary motion to the power shaft" in the connections between the motor 23, which connections consist of the belt pulley 22 secured on the armature shaft of the motor, and connected by the belt 21 with the grooved belt wheel 20, the hub of which makes up part of the element 15, which I stated was the driving shaft or the equivalent of the driving shaft of the patent in suit.

Defendant's machine unquestionably has the fourth element of the claim, "an upright shaft 45 mounted in

the support," in the dolly shaft 45 journaled in the support and which is upright when the lid is closed.

Defendant's machine has the fifth element "a driving device for the upright shaft operatively connected with the power shaft and capable of imparting an alternating rotary motion to the upright shaft," in the train of gearing interposed between the element 15 and the vertical dolly shaft 45. This train of gearing consists of the spur gear wheel 40 that I pointed out before as rigidly connected with the hub of the belt wheel and that spur gear wheel 40 meshes with the spur gear wheel 41 secured on the outer end of the horizontal shaft 43, the inner end of which has secured thereon the sprocket pinion 47, which sprocket pinion meshes with the teeth of the gear segment 46 which is splined on the vertical dolly shaft 45; it is splined on that shaft so that as the segment 46 is rotated and raised and lowered by the action of the co-operating pin 40, the dolly shaft 45 is merely swung back and forth without being raised and lowered, as it is not necessary to raise and lower the dolly shaft.

This gearing connection between the shaft 24 and the vertical dolly shaft 45 is an old and well known gearing connection and is the one covered by the famous Schroeder patent on a washing machine, that was involved in at least a dozen suits and I think I testified in half a dozen of those suits, on that patent, so that there is nothing new about this gearing; it is clearly performing its old and well known function in this place.

This defendant's machine has the sixth element, "a horizontal shaft 39" in the horizontal shaft 39 on which the lower wringer roll is secured.

This defendant's machine has the seventh element, "a driving mechanism for the said shaft 39, connected with the power shaft and capable of imparting a rotary motion to the shaft 39," in the following train of gearing: the mitre gear 15^a which I mentioned a while ago as secured on the hub of the belt wheel, meshes with another mitre gear 15^b which is secured on the adjacent end of the horizontal shaft 24 which is journaled in three bearings 25, carried by a bracket secured to the tub. This shaft 24 has rigidly secured on it two mitre gears 26 and 27 which of course correspond with the correspondingly numbered mitre gears of the patent in suit. Instead of having the clutch mechanism with clutch teeth in this structure, we have a sliding sleeve 29 which is carried on the outer end of the small shaft 36^a, or possibly I should say that the shaft carries the sleeve 29. This shaft has journaled on it a mitre gear 36 which is rotated with the spur gear 37 which meshes with the spur gear wheel 38, which is rigidly secured on the outer end of the lower wringer roll shaft 39. When the mitre gear 36 is in mesh with the mitre gear 26, the wringer rolls will rotate in one direction; when it is shifted to the opposite position, so as to be in mesh with the mitre gear 27, the wringer rolls will rotate in the opposite direction.

The defendant's machine also contains the final element, "a controlling means applied to the driving device for the shaft 39, for reversing the movement thereof, and also for operatively disconnecting the shaft 39 from the operating shaft."

I pointed out a while ago the handle 34 which is moved into any one of three positions, and the hub, if I may so style it, of this handle, has three flat surfaces on it, any one of which is adapted to co-operate with the flat

top of a spring press plunger 35, so that the handle 34 will be automatically held in either one of the three positions; so that this spring press plunger acting on the handle corresponds in its function precisely with the three recessed rack on the machine of the patent in suit.

The handle 34 is rigidly secured on the end of a horizontal rock shaft 32, that extends under the wringer rolls and parallel to them, and the outer end of this shaft has a crank portion 33 that engages a slot 33^a in a belt crank 30, which is journaled on the stub shaft 30^a. This belt crank 30 has an aperture in its upper end through which passes the shaft 36^a secured to the sleeve 29, so that as we rotate the handle 34 the sleeve 29 will be slid, by the connections I have described, into either one of three positions, so that the mitre gear 36 will engage with either of the mitre gears 26 or 27, or be in the neutral intermediate position, in which it is out of engagement with either, and in which the wringer rolls are at rest.

I believe I have stated, in discussing the claims as applied to the machine of the patent in suit, that claim 6 was in a way the most limited of the lot, and inasmuch as the defendant's machine has the elements of claim 6 it has the elements of claim 5, which is broader, in that it does not require the intermediate position of the wringer rolls. It also has the combination of elements pointed out in claim 7, inasmuch as it has the final element, "a hand lever for adjusting said controlling means," in the hand lever 34. It of course also has the elements of claim 8, inasmuch as the motor 23 is of course a "prime mover carried by the support, for imparting an alternating continuous rotary motion to the power shaft."

For the foregoing reasons, I am clearly of the opinion that defendant's machine contains each and every element enumerated in claims 5, 6, 7 and 8 of the Phillips patent in suit, in the same or a fully equivalent form, combined and co-operating in the same or a fully equivalent manner, for the same purposes and producing precisely the same results.

Deposition
John H.
McElroy

"By Mr. Orwig: In this connection, I wish to state Mr. McElroy has made some sketches of this machine that we would like to introduce as exhibits; they are not quite completed, but I ask that they be admitted now.

Exhibits

The drawings referred to by the witness are hereby offered in evidence and identified as 'Complainant's Exhibit No. 15, McElroy Drawings of Defendant's Machine.'

Direct examination closed.

Cross-Examination by Mr. Mehlhope.

X-Q. 11. Mr. McElroy, you have stated that the alleged invention in this patent is limited to a dolly type of washing machine, or words to that effect. Where in the patent do you find any authority for this position?

Cross-Examination
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A. Each and every one of the four claims relied on, Nos. 5 to 8, call specifically for 'an upright shaft 45 mounted on the support.' This upright shaft 45 is the dolly shaft of a washing machine of the dolly type, mounted in the lid of the dolly washing machine in the customary dolly type manner.

In view of the fact that the draftsman of these claims specifically mentions the dolly shaft by number, and in further view of the fact that the rules of the practice in the Patent Office prevented him from mentioning the elements of a washing machine in a claim of this character, I have assumed that it was the intention of the draftsman of the specification to limit these claims to gearing for a dolly type washing machine.

X-Q. 12. Would not the gearing as described in the patent and as called for by the claims, even with the limitation, 'an upright shaft,' operate in the same manner if the support were something else than a tub?

A. If you had the same gearing precisely and mounted it in another support besides the tub, and operated the gearing, the gearing would operate in the same manner, but I do not know of any place where it would have any utility except in the tub of a dolly washing machine.

X-Q. 13. Whether that be so or not, the gearing of that character would comply with the claims, would it not?

A. Possibly, so far as the terms of the claims are concerned.

X-Q. 14. Is there anything in the claim about the angle through which it is to be rotated before it is reversed?

A. The claim *per se* does not specifically state what the manner of rotation is, but the drawings illustrate a gearing in which the angle of rotation would be that which I have described.

X-Q. 15. But there is nothing in the claim to limit the upright shaft 45 to a shaft having the amplitude of oscillation which you have said this shaft must have?

A. I think there is, because the draftsman used the reference numeral 45, which refers the claim specifically to a dolly shaft which has this amplitude of oscillation.

X-Q. 16. Suppose one built a machine with an upright shaft 45, and in building his gearing he gears it in such manner that this upright shaft has a greater amplitude of movement, as you have suggested, would such a structure respond to the claim?

A. I should say that would depend on how much greater it was. If the amount of the amplitude of vibration or rotation materially exceeded the three-quarters of a complete turn, I should say it was outside of the intended scope of the patent; that is to say, I do not think the dolly shaft that reciprocates

through more than a complete turn would be a salable article, and I take it the patent is not intended to cover something that is commercially useless.

Deposition
John H.
McElroy

X-Q. 17. Suppose on the upright shaft there is placed some other kind of tool than the dolly of a dolly type washing machine, and the gearing was otherwise just the same as in the patent; would such a structure respond to the claims; that is to say, would the patent cover and be applicable to such a construction?

A. I would have to leave that to the court to determine, but I do not think it was intended to cover the use of this gearing for anything other than the dolly type of washing machine, and if there was no dolly it would not be a dolly type of washing machine.

X-Q. 18. In the second paragraph of page 1, lines 8 to 13, of the specification that you quoted, there is no reference to a dolly type of washing machine, is there?

A. No specific reference in words. The dolly type is the one illustrated in the drawings of the patent and described in the specification.

X-Q. 19. But in describing the object of his invention, the patentee has stated that his invention was particularly designed for 'use in operating washing machines and wringers by means of power applied by an electric motor or other source of power.' That language is broad enough to cover any type of washing machine, is it not?

A. Possibly, so far as that particular paragraph is concerned.

X-Q. 20. In giving your interpretation of these claims and in imposing the limitations you have imposed upon them, are you doing this on account of any reference you may have in mind as to the prior art, or simply from the face of the patent, or reading the patent itself?

A. I am doing it for two reasons: in the first place, I know that the Patent Office does not allow you to enumerate the elements of a washing ma-

chine in a claim for a gearing, and I take it that the draftsman of these claims in controversy wittingly used the reference numerals 45 and 39 to limit the claims to a machine having a vertical dolly shaft 45 and a suitably located horizontal wringer roll shaft 39.

In the second place, I may say that there are some patents in the prior art that have some bearing on the subject, but they do not show the dolly type of washing machine, so that that has something to do with my views on the subject. I go on the assumption that the court will interpret perfectly the claims of the patent, to uphold it rather than destroy it.

X-Q. 21. In order to make it clear as to just what limitation you think should be placed on these claims in regard to the amplitude of the oscillation of the upright shaft 45, I am handing you here a sketch, which I will mark for identification 'Defendant's Exhibit No. 4' and will ask you to state whether such a structure would be responsive to these claims, as you understand them, and in explanation I will inform you that this drawing is a plan view of a washing machine, substantially identical with the plan view of the washing machine shown in Figure 2 of the Phillips patent in suit. The parts are all lettered and marked the same—the only difference is, as you will see, that the gearing is interposed so that the upright shaft will be oscillated through more than the amplitude of oscillation you have referred to!

By Mr. Orwig: I wish to object to the introduction of this exhibit at this time, for the reason that the sole object of this exhibit is to illustrate a structure in which the dolly shaft would have a movement of a number of revolutions in each direction before reversal. Such a construction at this time has nothing to do with the cross-examination, for the reason that the two machines here in controversy both have dolly shafts, which have necessarily the same amount of movement before reversal.

This exhibit may possibly be pertinent at some later stage of the proceedings, when other machines have

been introduced, but at this time it is not a proper cross-examination—incompetent and immaterial.

*Deposition
of John
Howard
McElroy*

By Mr. Mehlhope: The witness has already taken his position and stated that the machine, where it rotates more than a half or three-quarters revolution does not infringe the patent.

By the Court: You are entitled to broad latitude on cross-examination; I will let you have it.

A. I do not think that the claims of the patent in suit are intended to cover the machine illustrated in this drawing.

X-Q. 22. Why not?

A. Because it has entirely too great an amplitude of rotation. The gearing here shown would rotate the vertical shaft 45 through several complete turns.

X-Q. 23. And yet, that drawing shows every element combined in substantially the same way as the elements called for by each of the claims in issue, does it not?

A. No, because additional elements have been interposed and a combination which gives it a much greater amplitude of rotation.

X-Q. 24. Name those additional elements, please.

A. They are the spur gear pinion 45^x and the internal toothed spur gear wheel 45^y, and the gearing for said elements.

X-Q. 25. Is not that a part of the gearing called for in claim 6, for example, as 'a driving device for the upright shaft, operatively connected with the power shaft, and capable of imparting rotary motion to the upright shaft'?

A. Not as I understand the intent of the claim.

X-Q. 26. In other words, if we somewhat change the gearing between the drive shaft and the upright shaft 45 from that shown in the Phillips patent, we do not respond to the claim; is that the idea?

A. It does not respond to the intent of the claim, as I understand it. I would not go so far as to say that it does not respond to the terms of the claim, if we disregard its intent.

X-Q. 27. In the prior suit against the Newton Washing Machine Co., there was a different kind

of gearing between the driving shaft and the upright shaft from that shown in the Phillips patent, and yet you held that it responded to the claims, did you not?

A. Well, there were some differences in the details of the gearing; the dolly shaft was swung through the same angle or substantially the same angle, in the Newton case, as it is in the machine of the Phillips patent in suit. I do not consider that the claims are limited to a specific form of gearing, but rather to the specific results obtained by the gearing; in other words, the limitation is as to the kind or amount of the reciprocation or rotation, rather than to the specific form of means by which it is obtained.

X-Q. 28. And the rotation of one amount or the other amount of amplitude of oscillation, whether from half to three-quarters of a turn, or from five to seven turns, is a mere matter of mechanical skill, is it not?

A. Well, that is always a question; mechanical skill is a very uncertain proposition. If you have a competent engineer who is accustomed to designing new structures and making inventions if necessary to produce such structures, I would say a competent engineer could give any desired degree of reciprocation to the vertical shaft; but in using the different degrees, he would be apt to use different gearing to produce the different degrees. In other words, if he was producing a very considerable rotation, such as in the sketch you handed me, he would use a different form of gearing from the one shown in the patent in suit, as that is not adapted for reciprocating the shaft through several complete turns.

X-Q. 29. But any capable mechanic, if he knew of this structure shown in the sketch and desired to produce a less amount of rotation, could do it without much trouble?

A. That would depend on the mechanic; I have had a great deal of experience with them—some are called good mechanics. An average mechanic works from drawings furnished him and he is told to fol-

low copy and he very seldom will make any change unless you give him instructions as to what you want done; he is not paid to make changes—he is paid to follow the copy.

Deposition
John H.
McElroy

X-Q. 30. You are familiar with shop practice, are you not?

A. In some shops.

X-Q. 31. You are familiar with the custom of driving a number of machines in a room from a line shaft from the roof of the room?

A. Certainly.

X-Q. 32. And, it is only since the smaller electric motors came in, when they made motors small enough to be run economically to operate single machines, that that custom was done away with, was it not?

A. Well, the introduction of the electric motor in various places has reduced the number of places where you will find the line shaft installation mentioned in your question.

X-Q. 33. It has always been customary to have a number of small machines mounted on a table, with a line shaft on the back of the table to drive the several machines, is it not?

A. You can find shops that have long benches that have the arrangement you describe.

X-Q. 34. It is customary even in households to supply a small table and power to drive several things, as egg beaters, dough beaters, ice cream freezers, etc., is it not?

A. Well, you might find some palaces somewhere that had that, but I never saw anything of the sort in an ordinary establishment.

X-Q. 35. Referring to the Phillips patent and to the machine made under it, Complainant's Exhibit No. 1, suppose that you cut off the shaft 15 just short of the bevel gear, 15^a, would there be any effect on the operation of the upright shaft 45—the dolly shaft?

A. Only that the motor would not have to carry this weight, as it does in the present arrangement.

X-Q. 36. If we consider the motor, the pulley 20, the large gear 16, the drive shaft 15 and the con-

nection between said drive shaft and dolly shaft alone, we have a complete entity; that is to say, a power driven washing machine; have we not?

A. Yes, you could destroy the invention by throwing half of it away.

X-Q. 37. And that washing machine would operate in the same way that it would if the rest of the mechanism were there, that now drives the wringer?

A. Not for washing in its broadest sense; so far as the operation of stirring the clothes is concerned, it would operate the same, but in the operation of rinsing, etc., you would have to do it in a very different manner.

X-Q. 38. Suppose, then, that we have the shaft 15 reproduced in another shaft along here, and that shaft geared to drive the wringer and through the same motor or another motor, to drive the shaft; it would operate the same way, would it not?

A. Such a commercially impractical structure might be made if anybody was fool enough to do it.

X-Q. 39. You have not answered my question as to whether the two machines would operate in the same way as they do now?

A. They could be used in the same general manner. You might have to manipulate the parts somewhat differently. Not knowing just exactly what your structure is, I cannot say as to details.

X-Q. 40. In order to eliminate any doubt as to what I want, I hand you a drawing marked for identification, 'Defendant's Exhibit No. 5.' This drawing embodies the suggestions I have made. You will see all the parts lettered as they are in the exhibit, but instead of there being one drive shaft 15 you will note there are two drive shafts, 15 and 15^x, one has a pulley 20 and the other has a pulley 20^x, driven from a motor. Please inform the court whether these two machines—the washing machine and the wringing machine—would not operate the same way as they do in the Phillips patent.

A. Your motor would have to be constructed in an unusual manner. You have the two pulleys ar-

ranged in such manner that I scarcely see how you could run them both from the same motor, unless the motor was of an unusual design.

However, assuming that you might use a specially designed motor and have two pulleys on the armature shaft, the resulting machine would then operate in substantially the same manner as in the machine of the patent in suit, but you would have an unnecessary amount of mechanism about the device.

X-Q. 41. You speak of an especially designed motor being necessary. Can you see any difficulty in locating a motor under this tub as it is there, and belting this with the pulley 20^x to one end of the armature shaft and the pulley 20 to the other end of the armature shaft, to bring the pulley 20^x into the proper train of the motor?

A. What I had in mind was more especially, that the ordinary form of motor of the proper size to carry the power required, would be rather too long for the position there, but there would be no question but what a specially formed motor could be designed that would fit in there. You would have to move the motor out from under the tub or use a deflecting bearing in the manner specified.

X-Q. 42. Examine the Complainant's Exhibit No. 1 and state whether, with a structure as shown in the drawing, Defendant's Exhibit No. 5, it would not be possible to change the armature shaft and put two pulleys on there and belt one to the pulley 20 and the other to the pulley 20^x?

A. If I understand your proposed modification, you would have to lengthen the armature shaft and use some deflecting pulleys. It would be possible to rig up some sort of a structure, though it would be anything but admirable, from a mechanical standpoint. I might mention that the legs of the washing machine would interfere with the extra belt, if the armature shaft remained in the same way.

X-Q. 43. Will you please point out, by referring to Complainant's Exhibit No. 1?

A. Possibly I misjudged the angles of the parts a little, but if it did not interfere with the legs, it would interfere with the insulating block.

X-Q. 44. You are not remembering the question, I think. I asked in the last question whether you could not put another pulley on this armature shaft, with the pulley that is already there, and belt them up to this second shaft 20^x which may be extended over so as to have the pulley 20^x on that shaft, in the train of the additional motor.

A. I beg your pardon; I did not understand that you intended it that way. If you did, it would be possible, by changing the parts as suggested in your question, to get them to operate in the manner you described.

X-Q. 45. Now, in accordance with your understanding of what the claims of the patent in suit mean, would you say the structure shown in the drawings of the Defendant's Exhibit No. 5 is responsive to the claim?

A. No.

X-Q. 46. Why not?

A. The parts would be improperly geared up and your wringer rolls would be operating at entirely too high a rate of speed.

X-Q. 47. Is there anything in the claims of the patent as to the number of rotations the wringer rolls shall make, as compared with the number of rotations the dolly shaft shall make?

A. No, but you cannot have the wringer rolls operating so rapidly as to make an impractical device. You have to have an approximate ratio between them to be a practical device.

X-Q. 48. State whether the construction supposed, in which the two shafts 15 and 15^x are driven from the same armature shaft of the motor, would respond to the claims, as you understand them?

A. As I understand your question, they would not, because as you have it arranged here, the wringer rolls would be driven much too rapidly to be practical.

X-Q. 49. Do you mean to say this structure cannot be built so that the wringer rolls will be driven at the proper speed?

A. I did not say the gearing cannot be modified, but you are asking me about the specific drawing and I am answering about that specific drawing. If your inventor, or who made this drawing, did not know enough to design the gearing properly, that is not my fault.

X-Q. 50. Is not the real reason that you say that the structure shown in Exhibit No. 5 does not infringe these claims, or does not come within the terms of these claims, because there are two separate drive shafts?

A. That would be one reason—there may be others.

X-Q. 51. Now suppose that those two shafts, 15 and 15^x are simply belted together as shown in this drawing, marked for identification Defendant's Exhibit No. 6. I will state that this drawing is exactly like the one previously shown, No. 5, except for the change mentioned, that the pulley 20^x is belted to a small pulley on the shaft 15. Would this construction respond to the claims in issue, as you understand them?

A. I do not believe that it would be a very practical device, for the purpose described, as you have gone to the other extreme now and are rotating the wringer rolls much too slowly; so far as the terms of the claims are concerned and disregarding their intent and spirit, it might be said that the language of the claims would read on this construction.

X-Q. 52. When this particular drawing or a copy of it was submitted to you in the case of *Grinnel vs. Newton*, was it not your opinion at that time, that the structure did not respond to the claims of the patent in issue because they had a common drive shaft?

A. Possibly; I do not remember what I said at the time. I may have overlooked the fact that you have a reducing gearing between the two shafts. I think it is possible I overlooked this fact.

X-Q. 53. Is any reducing gearing mentioned in the claims in issue?

A. No, but they are supposed to cover a practical device for operating a washing machine.

X-Q. 54. Is that not a feature left to the mechanic?

A. I would not want to say that because anybody having any practical familiarity with this art, knows that there must be certain relationship between the movement of the various parts. Of course when a mechanical engineer is familiar with these facts, he knows what proportions to give to the various parts.

X-Q. 55. Then you do not mean to indicate, or have the court understand, that Phillips showed anybody by his patent, at what speed to drive the wringer rolls or what gearing to properly oscillate the dolly shaft?

A. Well, I would have to say the prior art would cover that question. I have not had occasion to think about the prior art since the last suit, as I expected if I was recalled, to have the benefit of time during which your witness might be testifying about the prior art.

X-Q. 56. Dolly washing machines and gearing for driving them are quite old are they not?

A. Yes, twenty years at least.

X-Q. 57. And a great many different gears are used to drive the dolly?

A. Well, a great many gears have been proposed and quite a few actually used.

X-Q. 58. For example, the two gearings, the one on the complainant's machine in this suit, and the defendant's machine in this suit, are entirely unlike, are they not?

A. The specific details are unlike. The functions of the two gears are the same and the amount of the rotation given is the same.

X-Q. 59. Then, is it not a fact that as far as the claims in issue are concerned, a structure in order to respond to those claims may have wringer rolls that turn at any speed and may have a shaft that oscillates through any angle and amplitude, may it not?

A. If you regard purely the terms of the claim and disregard the intent of the claims, that would be true. Dep.
John
McEl

X-Q. 60. I thought you just said Mr. Phillips did not disclose any one of these devices?

A. Oh, yes, he shows a certain specific gearing. The question was whether he taught the proportions. Possibly I have become a little confused by the rapid cross-examination and forgotten what you were talking about.

X-Q. 61. Please state in what way the practice of Phillips in driving his washing machine on the one hand and his wringing machine on the other hand, from the same drive shaft—in what way that differed from the practice of a line shaft driving a number of machines in a shop?

By Mr. Orwig: The question is objected to as being improper cross-examination, and incompetent, irrelevant and immaterial. The thing for defendants to do, in order to bring out that kind of examination, is to present to this witness the prior art, so that he has something to talk about. He is now being asked to testify about hypothetical structures of machines which are the recent inventions of Prof. Kinealy, and a record is simply being made here that will not benefit any one.

By the Court: I cannot say as to the weight or value of it, but the witness may proceed.

A. If you are merely looking at the broad idea of two trains of gearing being driven by a common power shaft, and are excluding the character of these trains of gears and their purposes, and their relative speeds and all that, I would say that the same general broad idea is found in both cases.

X-Q. 62. Is there one word said in Phillips patent about the speed of the wringer shaft?

A. There is nothing said in so many words. The patent illustrates a structure in which the wringer shaft would have a certain speed relation.

X-Q. 63. Is it not a fact that the Phillips patent merely discloses a wringer machine driven by a power shaft, and that the mechanic building that,

knowing the speed that a wringer shaft should be driven at, provides it accordingly, and gives it the proper gearing to give it that speed?

A. As I understand your question, the Phillips patent discloses a form of gearing and you want to know whether or not the mechanic constructing the machine in accordance with the teachings of the Phillips patent, would not give the proper proportions to the gearing. I take it that he would, as is evidenced by the Complainant's Exhibit 1, which is built from the patent.

X-Q. 64. What new result is performed by this gearing described in the Phillips patent and claimed in the claims in issue?

A. As nearly as I can recall the prior art, the Phillips patent was the first to disclose a power driven dolly type of machine in which the user would use the machine for washing clothes and wringing them into one tub and out of another as occasion demanded, in the course of doing say a family washing.

X-Q. 65. Would one attain the same result if they took two machines like Phillips and used one to wash with and the other placed alongside of it, to wring with?

A. Possibly they might, in a less convenient way. Without stopping to give the matter very extended consideration, it seems to me that you might have some difficulty in performing some of the wringing operations in connection with the rinsing and preliminary soaking and wringing of the soapy water out, as conveniently as you can with a machine of the patent in suit.

X-Q. 66. Is there any co-action whatever between the washing machine as such and the wringing machine as such, or any co-operation between them?

A. I think there is. You can use both at the same time, you can be washing one batch of clothes while you are wringing out another batch in the course of the same operation of doing a family washing.

X-Q. 67. You do not operate on the same work-piece or piece of clothes at the same time?

A. No, you cannot operate on the same garment at the same time. Depo
John H
McElr

X-Q. 68. In other words, you can do just the same thing in the case of a mill machine which planes the boards and the boring machine, which bores the same board?

A. Not knowing exactly the specific structure you have in mind, I could not say. I take it, you are getting at the question of aggregation—technical aggregation—and as I recall the recent court decisions, which have passed on that question, it is not necessary that all parts of a machine operate on the same material at the same instant. The different parts of a machine can operate on different parts of the material at different times.

X-Q. 69. Suppose you have one blanket to wash—you put it in the washing machine and you wash it. Then that day or the next, you wring it. Will you state in what way there is any co-operation between the action of these two machines, speaking as I have been, of the Phillips machine?

A. There is a co-operation in that the two sets of gears are mounted on the same common support and they are properly designed so as to carry out expeditiously the purpose of the machine in doing a family washing. If you take the extreme example cited in your question, in which you wash a blanket one day and wring it out the next day, on such an extreme example, I do not see that there would be any particular advantage in having this single machine, over having two machines, except of course that the single machine would be cheaper than the two machines, and would occupy less space and generally be more desirable.

X-Q. 70. And, you would have the same advantage, if the wringer, instead of being mounted on the tub there, were mounted on an adjacent tub, would you not, and there would be the same co-operation between the two, would there not?

A. Well, I pointed out certain—what I might call structural co-operation—that would not be present in the machine as you described it in your question, or rather, in the pair of machines.

As far as the mere operation of washing out one blanket is concerned, which I have before stated is an extreme illustration and not a fair one, the two machines would have the same general mode of operation as the single machine, but that would not be a fair comparison, alongside the work of doing a family washing, where there are a number of garments to be washed and the tub has to be filled several times.

X-Q. 71. Without reference to whether the question is a fair one or not, just answer the question: suppose we change the example to a washtub full of clothes, and we wash them one day in the Phillips machine, and then the same day or the next day we wring them. What possible co-action or co-operation or relation of any kind whatever is there between the two machines—the washing machine and the wringing machine?

A. There is the structural co-operation or co-action that I explained before; inasmuch as you have one common support for them, and a common power shaft and a common motor.

X-Q. 72. And you have the same kind of co-operation and co-relation when you have associated on a table three or four small machines, all driven by a common line shaft, which you say is old?

A. Not necessarily; I question whether you would. The wringer of the dolly type of washing machine has a very definite location alongside of the tub, so when the washing is done and the lid is lifted, the clothes are put into the wringer, the minimum amount of effort on the part of the operator and the whole machine is designed as a unitary structure. In your example of a bench with various machine tools put on it, those tools are put on there without any thought as to their relationship to some other tools. I do not say there might not be some shops where tools are placed in certain co-operative relationship, but that is not the situation that I understand you are driving at, in your question.

X-Q. 73. Now let us make our washing machine tub a work bench. I am handing you here a draw-

ing, marked for identification "Defendant's Exhibit No. 7," which is identical with Figure 2 of the Phillips patent, except that now I have inserted an extra common drive shaft 15³ on each side of the shafts driving the washing machine, one 15 driving the washing machine and the other 15² on the other side, driving the wringing machine. This common intermediate shaft is belted to each of the other two. I want you to note in considering this drawing, that the belts and pulleys are so arranged that both shafts will run at the same speed and apparently from this drawing they will run at about the speed shown in the Phillips patent. Please state whether that is shop practice or whether that is the Phillips patent?

Deposited
John H.
McElroy

A. Well, that is a crazy, and I might say, fool construction. If anybody ever built it, I would say it would come under the terms of the claims of the Phillips patent.

X-Q. 74. What is the matter with the structure?

A. It is idiotic to use all that unnecessary mechanism and gearing.

X-Q. 75. But you say it comes under the terms of the claims in issue and is responsive to it?

A. Yes, I should say it is. I do not think anybody would manufacture it, but if they did, it would come under the terms of the patent.

X-Q. 76. Please state how that differs from two machines—one a small planer and one a small boring machine—placed on a table in a shop, with a line shaft on the back, with the line shaft belted to the line shaft of the planing machine and also belted to the line shaft of the boring machine.

A. Well, I would say without any question, that considering your question as it stands, one has reference to machinery intended to work on wood and the other has reference to machinery intended to wash clothing.

X-Q. 77. Is that the only difference?

A. No, the mechanism and gearing are all different.

X-Q. 78. Please state in what way, if any, the shaft 15, which you call the common drive shaft of

the Phillips machine, functions differently when driving the washing machine part of the device and when driving the wringer machine?

A. I do not know exactly what precise meaning you give to the word 'functions.' Clearly in the one case, it serves to apply power through the pinion 40 to the train of gearing for automatically reversing the dolly shaft. In the other case, it serves to apply power through the mitre gear 15^a to the gearing for rotating the wringer rolls.

X-Q. 79. In both cases, does not this shaft 15 operate or function exactly the same way?

A. Considering it merely as a shaft, apart from the other elements, it functions the same way, just as in the case of any other drive shaft.

X-Q. 80. Now, considering that this shaft, which you say operates the same way in each case, is operating the washing machine, you throw the arm to start the wringer; is the operation of the shaft 15 in any way affected thereby except to require additional power to be applied to it?

A. Considered merely as a drive shaft, it operates as any other drive shaft does, with an additional weight on it.

X-Q. 81. In other words, it operates the same as the line shaft on the table, does it not?

A. Well, understanding your statement has reference merely to the action of the shaft *per se*, that is true.

X-Q. 82. How else would a shaft act, except *per se*?

A. I do not know what you have in mind. You are asking a lot of questions rapidly, that it is hard to tell what you mean.

X-Q. 83. I am trying to find out whether this shaft operates in any different fashion from a line shaft, or whether it operates in any different way when operating the wringer than when it is operating the washing machine.

A. Considering the two shafts purely as shafts, and disregarding the functions of the gears operated by the shafts, the action is the same. All drive

shafts have the same action, considered purely as drive shafts.

Depo-
John
McEl

X-Q. 84. Well, there are certain trains of gearing in machines driven by the common drive shafts on the table, are there not?

A. I suppose so.

X-Q. 85. The same is true, whether we have one kind of gearing to drive the wringer machine of the kind described, and a different kind of gearing to drive the washing machine?

A. They are both driven by a common drive shaft.

X-Q. 86. What I am trying to get at is whether it makes any difference whether it is a wringer or a washing machine, or any other kind of a washing machine. Is there not the same co-action between the several machines driven by the line shaft on the machine shop bench, and in the case of the washing machine of Mr. Phillips?

By Mr. Orwig: The question is objected to as irrelevant and incompetent.

By the Court: It may be answered.

A. Considered purely as a drive shaft and the first element in the train of gearing, yes; but when you come to consider the action on the ultimate elements of the gears, that would be very different. In one case, you have the final action on the clothing; in the other case, if I recall your illustration correctly, the final action is on the wood that is being put into shape.

X-Q. 87. Mr. McElroy, consider this machine, Exhibit No. 1, with the arm controlling the wringer in neutral position, or consider it entirely removed. Now, suppose you start the motor, start the drive shaft 15 to operate to wash the clothing; there is a certain function, a certain mode of operation of those parts, when the motor is started, is there not?

By Mr. Orwig: Objected to as vague, indefinite and meaningless.

A. As I understand your question, there is.

X-Q. 88. Suppose we switch the arm so as to throw the wringer into operation in one direction.

Have we in any way affected the mode of operation of the washing machine parts?

A. Not of the train of gearing, *per se*. The effect is on the total or complete combination, not on the sub-combination.

X-Q. 89. Your answer would be the same if I reversed the question and referred to the wringer machine as being operated and the washing machine removed, and then should throw a switch to bring the washing machine into operative connection with the motor?

A. As I recall the preceding question, my answer would be the same as in the last question, except of course that in one case you have added the washing operation to the wringing operation, whereas in the other case you added the wringing operation to the washing operation. In both cases you have added to the operation of the sub-combination, the operation of another sub-combination, in the complete combination; thus putting the entire combination into operation.

X-Q. 90. Mr. McElroy, if we should take Complainant's Exhibit No. 1 and turn it over on its side so that the dolly shaft would be in a horizontal position, would it respond to the claims in issue here?

A. Not to the intent of the claims. The machine would be inoperative in that position.

X-Q. 91. And it is absolutely limited to a vertical dolly shaft—that is, the claims in issue are?

A. They say very specifically, 'An upright shaft 45'; I suppose 'upright' and 'vertical' are synonymous.

X-Q. 92. Looking at the drawings of the Phillips patent, would it not appear that the bearing and pinion 20 and 17 of the Phillips patent most clearly resemble the bearing and pinion thereon of the defendant's machine; that is, in function and operation?

A. The resemblance you mention is superficial, but when you go to the consideration of complete combinations, as shown in the claims of the Phillips

patent in suit, I think the comparison I made is more accurate.

Depo-
John
McEl

X-Q. 93. Well, if the sleeve which you have marked 15, that is to say, the hub of the red fly-wheel, is the same as the shaft 15 of the Phillips patent here, where in the defendant's machine do you find the pulley 20 and the pinion 17?

A. The pulley 20 is the red belt wheel. The pinion 17 of the Phillips patent in suit is not present in the defendant's machine, but I would call your attention to the fact that none of the claims inquired about are directed specifically to the employment of this pinion 17, but they all describe the gearing in broad terms.

X-Q. 94. Now, referring to the drawings of the Phillips patent, will you first point out in defendant's machine the motor 23?

A. I should think you could possibly see that yourself under the tub with the mark '23' on it.

X-Q. 95. Next refer to the pulley 22.

A. That is the pulley on the end of the armature shaft.

X-Q. 96. And the pulley 20, I presume, is this red grooved fly-wheel?

A. Yes.

X-Q. 97. And the belt 21 is the belt connecting the fly-wheel with the armature pulley?

A. Yes.

X-Q. 98. Where do we find the pinion 17?

A. I told you the pinion 17 is not present in defendant's machine, and I also told you that none of the claims in controversy are limited to a specific structure requiring the pinion 17.

X-Q. 99. Where is the spur gear 16?

A. The remarks relative to the pinion 17 will apply to the spur gear wheel 16.

X-Q. 100. In the Phillips patent, what is the function of the pinion 17 and the spur gear 16?

A. That is a reducing gearing.

X-Q. 101. A little while ago you referred to the fact, did you not, that speed reducing gearings had something to do with whether or not certain machines would be responsive to the claims?

A. That is true when you come down to the speed of the final elements; the claims have nothing to do with the speed relationship of the various intermediate gearing. The question is as to the speed of the final elements, not the intermediate gearing. the claims are broad in so far as they describe the gearing between the power shaft and the dolly shaft and the wringer rolls.

X-Q. 102. Is there any equivalent of these gears 16 and 17 in the defendant's machine?

A. Manifestly there is some equivalent there, because you get substantially the same relationship.

X-Q. 103. Please point them out.

A. The entire question is whether the gearing is properly designed, so that a motor running at the speed for which it is designed, will reciprocate the dolly shaft automatically at the ordinary speed at which these machines are driven, and will rotate the wringer rolls at the ordinary or practical speed. The question is not as to the details of the gearing.

X-Q. 104. Then the equivalents of the gears 16 and 17 are not in the defendant's machine?

A. If you take the complete combination from the motor to the wringer rolls and to the dolly shaft, I should say that the equivalents are there.

X-Q. 105. Please point them out.

A. I do not think it is necessary to analyze the entire train of gearing; I have done so in my description of the defendant's machine by employing the corresponding reference numbers as well as I could. The details of the gearing in the two machines are different, but I have told you again and again that the claims inquired about are not concerned with the details of the operation between the power shaft and the dolly shaft, and between the power shaft and the wringer rolls, for in every case the claims have 'a driving device for the upright shaft, operatively connected with the power shaft and capable of imparting an alternating rotary motion' and 'a driving mechanism with the said shaft 39 connected with the power shaft and capable of imparting a rotary motion to the shaft 39.'

Of course, I cannot find the exact equivalent of every detail in the machine of the patent in suit in the defendant's machine, but I have pointed out what I consider to be the full equivalent of every feature enumerated in the claims.

X-Q. 106. That is, you have pointed out the same result was produced, but you have not pointed out the element equivalent to the gears 16 and 17, which produce that result in defendant's machine.

A. If you want to get that, it is a question of gear reduction and the function to the power shaft. In the machine of the patent in suit, the belt wheel is about the same size as the belt wheel on defendant's machine, but the pulley on the armature shaft is say two and one-half or three times as large as the pulley on the armature shaft in the defendant's machine, consequently you do not get as great a speed reduction between the pulley 22 of the machine of the patent in suit, and the belt wheel 20, as you do between the same elements 22 and 20 in the defendant's machine. Consequently, Phillips resorts to the use of another speed reducing gearing 16 and 17; the equivalent in defendant's machine is present because defendant has used the radically smaller pulley 22.

X-Q. 107. Mr. McElroy, in referring to the upright shaft 45 called for by the claims in issue, you have seen fit to place certain limitations on this particular element. Now, the claims, each of them, also mention a horizontal shaft 39. What, if in any way, do you understand the numeral 39 to limit this element of the claims?

A. I assume that the draftsman of the specification used the reference numerals 45 and 39 advisedly, to limit the upright shaft to a dolly shaft and to limit the horizontal shaft 39 to a wringer roll shaft.

X-Q. 108. The dolly shaft is to have only a certain amplitude of rotation however, as you stated?

A. To be practical, there must be certain limitations on the amplitude of rotation of the dolly shaft.

X-Q. 109. Now, does the numeral 39 place any

limitation on this element, the horizontal shaft, except that it is to be a wringer shaft, as you understand the claim?

A. So long as the gearing was designed to be used for this type of washing machine, I should say that there should be a rather definite relationship between the speed of rotation given to the wringer roll and to the speed of rotation given to the dolly shaft; that is to say, there are certain limits within which the speed of rotation of the wringer rolls is practical. If you run the rolls too slowly it is a waste of time to try to wring with them; I imagine if you run them too rapidly, you are liable to get into difficulty, and I take it there are certain limitations as to speed at which those wringer rolls should be turned. Similarly I should think it would be advisable to place limitations upon the speed at which the dolly shaft reciprocates; if you reciprocate it too slowly it is a waste of time, if you reciprocate it too rapidly you will probably have an injurious effect on the structure; too much vibration—possibly it might cause some leakage.

X-Q. 110. Does the use of the numeral 39 in the claims impose any limitation on this horizontal shaft as to its relative location with the rest of the gearing mentioned in the claims?

A. Well, I would understand in view of the illustrations of the patent, that this shaft 39 should have the proper location relative to the side of the tub, so that the operator standing in front of the tub can feed the clothes out of the tub through the wringer rolls without any unnecessary exertion or movement.

X-Q. 111. You have several times mentioned the side of the tub; will you please state which is the side and which the front of this round tub?

A. I think that I have, in using the term 'side' with reference to the wringer rolls, had in mind that the place where the operator stood was the front of the tub and that the position at right angles to the front or place where the operator stood, was the side of the tub.

X-Q. 112. Has this location you have defined any relation that you can specify, with reference to the axis of the hinge of the lid of the tub? Dep
John
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A. Well, there is a certain relationship shown in the patent, but that relationship does not seem to be essential to make a practical device. You will notice that in defendant's machine the axis of the hinges is along the side of the tub, whereas in the machine of the patent in suit the axis of the hinges is along the back of the tub.

X-Q. 113. In the machine of the patent in suit, the 'horizontal shaft 39' being the wringer shaft as you have said, is arranged at right angles to the axis of the hinge of the lid of the tub, is it not?

A. Yes.

X-Q. 114. I call your attention to the Automatic machine in the suit of Grinnell *vs.* Woodrow and others, and the defendant's machine in the case of Grinnell *vs.* Newton Washing Machine Co., and ask you to state whether or not the shaft 39, being the wringer roll shaft in said machines, has not the same location relative to the hinge of the tub lid, as has the like shaft of the machine of the patent in suit?

A. That is correct.

X-Q. 115. Now, turning to defendant's machine in this case, would you say the same thing?

A. The result is the same, so far as the operation of washing the clothes is concerned, but it is a fact that the wringer roll shaft is on one side of the machine, parallel to the axis of the hinges of the lid which is on the other side of the machine.

X-Q. 116. In saying that the result is the same, you mean the wringer will act as a wringer, no matter what position it is placed in, on the tub, do you not?

A. A little more than that; if the wringer were placed at the back of the tub, it would be decidedly inconvenient to reach over the tub, but I would not say it is an impossibility. There is this difference in the arrangement of the machine of the patent in suit and the defendant's machine; in the machine of

the patent in suit you feed the clothes from the tub to the right, to go through the wringer rolls, and in the defendant's machine, you feed the clothes from the tub to the left, to go through the wringer rolls.

I take it that is purely a matter of choice in designing the machine, the same as here you have a right hand or left hand drive in the automobile, for instance.

X-Q. 117. Compare the gears interposed between what you have called the drive shaft and between the wringer shaft in the case of the machine of the patent in suit and in the defendant's machine, and state whether these gears are in any way alike, and if so, to what extent?

A. The two kinds of gearing inquired about are specifically different in the two machines, but that is immaterial in the present controversy because the train of gearing referred to is described very broadly in the claims inquired about. The resultant action of the two trains of gearing is the same. There are certain elements used in both trains but they are used in somewhat different combinations, the different combinations, however, being designed to effect the same result in substantially the same way. For instance, in defendant's machine the opposed mitre gears are fixed on the shaft, and in the machine of the patent in suit they are loose on the shaft, and one or the other is clutched to the shaft. On the whole, the train of gearing in defendant's machine is rather simpler, possibly, than in that of the patent in suit, yet there is not much difference. In the one case, the speed reduction is effected by the use of a sprocket pinion connected by a sprocket chain with a large sprocket wheel, whereas in defendant's machine the same speed reduction is effected by the spur gear pinion meshing with the large spur gear wheel. In the mechanism for shifting the train of gearing, there is a resemblance in that in both cases you have a rock shaft with a handle, and means to hold the handle in either of three positions of the rock shaft, and in both cases you have a crank portion co-operating with the shift-

ing mechanism to shift the position of the sleeve that controls the direction of rotation of the wringer rolls. Dep.
John
McEl

If there is any other specific feature I have not mentioned, I will be glad to reply to it in connection with inquiries directed to those features.

X-Q. 118. And the features you have referred to in both machines were all familiar mechanical expedients at the time Phillips entered the field, were they not?

A. All the elements going to make up the combination were old and well known, and considered purely as a reversing gearing, it is possible that the structure shown in the Phillips patent might be found in the prior art.

X-Q. 119. As a matter of fact, it is in the prior art, is it not—one of the most familiar forms of reversing gearing?

A. I could not say whether the precise thing is in the prior art, but there is no doubt there is something similar to it.

X-Q. 120. It is not your position in this case, then, that Mr. Phillips, when he designed the machine, disclosed in his patent, was the first to reverse a shaft?

A. Certainly not.

X-Q. 121. It is familiar in all mechanical arts, to drive one shaft from another shaft and to drive a reverse mechanism, so that you can drive the shaft in either one direction or the other, or stop it and hold it at rest?

A. I do not understand that that is necessarily true for all mechanical arts, but it is true for a great majority of them.

X-Q. 122. Referring now to the controlling mechanism for shifting the reverse gear in defendant's machine, is it not a fact that this controlling mechanism is entirely different from that disclosed in the patent in suit?

A. I would not say it is entirely different, inasmuch as it has precisely the same purpose and some very similar elements, having the same mode of op-

eration. There are some differences, however, as I pointed out a while ago.

X-Q. 123. Have you pointed out all the differences?

A. Well, it is hard to remember exactly what I have said about it. It may be I have omitted some point.

X-Q. 124. The sum and substance of your position with regard to the claims in issue here would then appear to be this, and please state, yes or no, whether I have correctly stated your position; if one take a dolly washing machine of the generally well known type that has been on the market and was on the market long prior to Phillips—if he placed on the tub of that washing machine a wringer in any of the usual places where a wringer is placed most conveniently, if he takes any kind of familiar mechanism for operating that dolly, all well known prior to Phillips, if he provides means for driving his wringer by power, with a reverse mechanism so the wringer may be driven in either direction, and couples the wringer drive mechanism, no matter what kind it may be, provided it includes a reverse mechanism, and the dolly driving mechanism, with a common drive shaft, he will infringe the claims involved in this suit?

A. I think your statement is a little bit broad in some particulars. As far as it goes, it is probably correct, but I would like to add that one claim; for instance, the sixth, provides that your reversing gearing must be of such a character that the controlling mechanism will allow the wringer rolls to be at rest in spite of the fact that the power shaft is running. Possibly your statement is rather broad with reference to claim 7, for instance, because I do not think you included the limitation of 'a hand lever for adjusting said controlling means' in your statement. Then, too, you omitted from your statement the limitation as to there being 'a prime mover carried by the support for imparting a continuous rotary motion to the power shaft.'

Furthermore, as I understood your statement, you did not include any limitations as to the two trains of gearing leading from the wringer rolls and the dolly shaft to the common drive shaft, being properly designed on the one hand to rotate the wringer rolls at a practical speed, and on the other hand, being properly designed to swing the dolly shaft through the proper angle and at a proper speed.

It seems to me that with the additions I have made by way of my answer, that the statement would be correct, but as it stood in your question, it is decidedly too broad."

Cross-examination closed.

COMPLAINANT RESTS.

XIII. And thereupon defendant's counsel, Taylor E. Brown, Esq., opened and read and asked leave to file the following depositions, taken at Chicago, Illinois; and also introduced in evidence and filed the various exhibits referred to in said depositions, to wit: Defendant's Exhibits No. 1 to 3, inclusive, pursuant to the order of this court of June 13, 1914, to wit, the depositions of Alva J. Fisher, Torris H. Alfreds, Louis H. Schmetzer and Frank E. Geisler, said depositions being in words and figures as follows, to wit:

of
her

And, thereupon, ALVA J. FISHER, a witness produced on behalf of the defendant, having been first duly cautioned and sworn, testified, on direct examination, as follows:

My name is Alva J. Fisher, my age 52, residence 840 Michigan avenue, Evanston, Illinois, and my occupation, superintendent of the Hurley Machine Co., at 29 South Clinton street, Chicago, Illinois (Q. 1); I think I began work for the Hurley Machine Co. in July, 1907 (2); the present business of the Hurley Machine Co. is the manufacture of electric washing machines, and other things (3); the trade name under which one of the Hurley Electric Washing machines is advertised and sold to the trade is the Thor Electric, and the other is the Red Electric (4); I was connected with the Hurley Company when it first manufactured and put upon the market its electric washing machine or machines (5); the reversible cylinder device of the Hurley machine is patented, and I am the inventor (6); as nearly as I can now recollect the date when I completed the first electric washing machine for the Hurley Company, which was patented, was the 13th of March, 1908. I commenced it on the 13th of March and completed it on the 13th of April, 1908 (7); the Patent Office drawings for my patent were made from this machine (8); the patent solicitors were Poole & Brown (9); I do not remember who the draftsman was who made the Patent Office drawings (10); I recognize the 34 typewritten sheets and four sheets of blueprints which are now handed to me as the drawings, or a copy of the drawings of the application for the patent on my invention to which I have just referred (11).

STIPULATION.

Stipulation
June 7

At the request of defendant's counsel, it is stipulated and agreed by complainant's counsel that the copy handed to the witness and referred to in his last answer is a correct copy of the specification and drawings of the application of the witness, serial No. 455,028; and the same was filed in the United States Patent Office on the 28th day of September, 1908; that a divisional application, serial No. 498,748, was filed in the Patent Office May 28, 1909, which division application eventuated into Letters-Patent No. 956,677, issued and dated August 9, 1910; that the original application left remaining in the Patent Office (after said divisional application was made) never eventuated in a patent; that the last office action by the Patent Office on said original application rejecting the remaining claims made by the Patent Office was dated April 11, 1910; and that said original application has been abandoned; and that the foregoing stipulation is made subject to correction for typographical errors at any time complainant's counsel discovers same, if any exist.

Exhibit Offered.

Defendant's counsel then offered in evidence as ^{Exhibit} an exhibit the copy of the application of Alva J. Fisher for drive mechanism for washing machines, serial No. 455,028, as filed September 28, 1908, together with the blueprints of the drawings referred to in the last answer of the witness and in the above stipulation and the same were duly marked and identified with this record as "*Defendant's Exhibit No. 1—Copy Fisher Original Patent Application. Grace A. Southwell, Notary Public.*"

Continuing his deposition, the witness, Fisher, said: This application does not show or describe any device for reversing the direction of movement of the wringer rolls (12); the washing machine which I said I completed on or before April 13, 1908, and from which the drawings

of her
for this patent application were made, did not have, at that time, any device attached to it for the reversing of the wringer rolls (13).

"By Mr. Brown: Q. 14. State whether or not you ever made and attached to this machine that you constructed and finished in April, 1908, any device to operate the wringer rolls and reverse the direction of movement thereof, and if you did please state in detail precisely what you did? And, in giving your answer, if you used any parts of the device which on Defendant's Exhibit No. 1 are identified by reference numerals, please use the reference numerals in your answer when naming the parts."

The witness, Fisher, then answered: "Along in June, 1908, I attached practically the same mechanism on a smaller scale as I used in reversing the cylinder of the machine we had just at that time constructed. The difference of the construction for operating the cylinder was the bell crank operating the clutch, which in the cylinder device was automatic, and of the wringer device the clutch device was operated with a straight lever. In reversing the wringer rolls in either direction, we used the shaft 22 and the sleeve 26 and the gear 35, gear 38, gear 36, and clutch 42, feather key or spline 47, clutch 42 and with a bell crank or caption for the clutch 98 and 99, 98 was extended straight out or parallel to the vertical line and used as a handle for reversing the intermediate clutch; the frame that contained these gears was attached to the upright of the wringer."

At that time we used a two roll wringer (15); we attached the reversing gears to the lower wringer roll shaft (16); the drawing of my application shows the two gears 35 and 36 and the sleeve 26 mounted on a horizontal shaft 22. That is the part of my device which operates the tub of the washing machine (17); I mounted the two gears corresponding to the gears 35, 36 and the sleeve 26, upon the lower shaft (18); so that when look-

ing at the drawing of my application, Figure 2, the shaft designated as 22 corresponds with the lower wringer roll shaft as I applied the reversing device to the wringer (19); in using this reversing device to operate the tub of the washing machine, the bell crank lever 98 was actuated by a cam, 80 (20); this construction made the reversing of the direction of rotation of the cylinder or washing machine drum automatic (21); the tub made, I think, nine complete revolutions in one direction before reversing, it reversed on every ninth revolution (22); when this reversing device was applied to the wringer roll, it did not automatically reverse. It was operated by hand (23); in placing this reversing device on the wringer roll, I used the same parts or duplicates of the parts shown in the patent application. I used the same parts as I enumerated in smaller sizes (24); this machine which was completed on the 13th of April, 1908, and to which I applied this reversing device in June, 1908, was driven by an electric motor (25); the electric motor was used to drive both the reverse mechanism for the tub and the reverse mechanism for the wringer (26); it was a Robins & Myers motor of the D. C. type; that is, direct current type (27); the connection from the motor shaft to the operating shaft was by belt (28); and the connection from the operating shaft to the fly wheel 30 on the shaft 22 was also by belt (29); the operating shaft on my application is designated by the numeral 53 in Fig. 4 of the drawings. The shaft 53 was a fixed, non-rotating stub shaft, but the pulley that was belted to the motor and the pulley that was belted to the large pulley 30 and the sprocket that was belted by a sprocket chain to the wringer shaft were connected together and mounted on the stub shaft 53 (30); when I mounted this reversing mechanism of my

Deposition
Alva J.

patent upon the lower wringer roll shaft, as I have testified, I operated the machine with the wringer roll reversing mechanism attached (31); and it worked all right (32).

I think the first machines put on the market by the Hurley Company were sent out along in July or August, 1908. The first one that I remember (33); that machine was sold, I think, for \$60 (34); that machine had a reversing device for the wringer. It had the three rolls, three wringer rolls; they were all vertical, one above the other, all geared together (35).

You understand that in a three roll wringer where the three rolls are geared together, all three rolls are running at the same time and that the reversing is done by the operator passing the clothes between the lower and the middle roller, from one side of the machine and then passing the clothes between the middle roller and the upper roller from the other side of the machine (36).

"By Mr. Brown: Q. 37. After having made a reversing device for operating a two roll wringer in your machine of June, 1908, how did it happen that when you came to put your machine on the market you did not use that same reversing device but used a three roll wringer without a mechanical reverser?

A. We obtained the same results with a three roll wringer as we did with a mechanical reverse two roll wringer at a much less expense. It required no operation of levers or other devices.

Q. 38. What had the question of expense to do with it?

A. It had a good deal to do with it, when we were trying to sell the machines.

Q. 39. At the time you put out your first machines which you say were sold for \$60, were there any other domestic washing machines on the market, power-driven or otherwise, so far as you know, that sold for any such price as \$60?

A. There were several domestic power-driven machines; the Paragon was one, the 1900 Washer Co. was another. The Paragon was a cylinder type machine and the 1900 washer was an ordinary tub agitated back and forth. I do not recall the price of the Paragon, but I think the 1900 washer was sold at that time for \$50; this is my recollection.

Depo
Alva

Q. 40. While you say you do not recall the price of the Paragon machine at that time, do you recall whether the price was above or below \$60?

A. My recollection is that it was above \$60 and that this type of machine had a cylinder that would only oscillate about seven-eighths of a turn. It was a much cheaper construction than the one we were making.

Q. 41. Did you maintain your price of \$60 or not on your machine?

A. No, sir. We increased it to \$75. I think that was in the spring of 1909."

The machine that I finished in April, 1908, and on which I put a reversing device for the wringer in June of 1908, was built in the Hurley Machine Company's shop on Jefferson between Adams street and Jackson boulevard (42); I did part of the work myself (I mean the work of making the wringer reversing device and attaching the same to the lower wringer roll); and I had a machinist who did the other part (43); his name was Frank Geisler (44); he's in the employ of the Hurley Machine Company (45); Frank Geisler saw the machine when I completed attaching the wringer device to the wringer rolls, in June, 1908 (46).

"By Mr. Brown: Q. 47. State whether or not at the time you attached the reversing device to the wringer roll shaft of this machine you had any conversation or negotiations or dealings with anybody connected with the manufacture of wringers with a view of having them make and deliver to you or the Hurley Company a two roll wringer machine

with a shaft for the lower wringer adapted to receive this reversing mechanism which you had at that time?

A. We got our wringers from the American Wringer Co. Mr. Lewis Schmetzer is the Chicago representative of the American Wringer Co."

I think Mr. Schmetzer saw my machine with the reversing device for the wringer rolls. He was over there a number of times (48); I had conversation with him about it, or explained to him in a general way how the device operated (49). I recall that an objection he made was that the wringer being wood was too light to carry the mechanism to drive the wringer (50); it was his opinion that the wringer wooden frame was too light to carry the heavy reversing mechanism (51); he did not suggest anything in place of the two roll wringer with my reversing mechanism (52); I first thought of the three roll wringer device. I was the first one to put it on in our factory (53); I purchased our three roll wringers from the American Wringer Co. (54); at the time we first purchased our three roll wringer from the American Wringer Co. there were no three roll wringers for domestic washing machine on the market, so far as I know (55); when I decided not to use the reversing mechanism for the two roll wringer because of the expense, we used the three roll wringer (56) I made an investigation to determine whether or not I could reverse a two roll wringer from the motor by reversing the motor (57); I found I could reverse our mechanism with a D. C. motor by throwing the switch, but it's not very satisfactory to reverse an alternating current motor in the same manner, owing to the fact that the starting coils of an alternating motor are more or less injured by constant reversing (58); and at that time we were advised by the

Westinghouse Company, who builds alternating motors, that about 90 per cent of the current used throughout the country was alternating (59); it would not have been practicable at that time to use a two roll wringer and depend on a reversing switch of a direct current motor, as only 10 per cent of the proposed users had direct current, and it was not practicable to use an alternating current motor with a reversing switch because of the danger that I have just mentioned of injuring the starting coils. We acted solely on the advice of the motor builders and discontinued the reversing switch for the motor (60); among the persons connected with the Hurley Machine Co. other than myself and Mr. Geisler, who saw at the time, or who knew of the fact, that I had placed a mechanical reversing device on the two roll wringer machine in June, 1908, were Mr. Neal C. Hurley, who was there practically all of the time. As I recall it, Edwin N. Hurley, who was the president of the company, was away most of the time, I think in California. At least I know he was not present when we first started the machine; he was out of town (61); Mr. Neal C. Hurley is in the office end of the business entirely and not the mechanical end (62); as to the relative cost of equipping our machine with a three roll wringer and driving the lower wringer roll by a sprocket wheel and chain, compared with the cost of making a two roll wringer with our mechanical reverser, lever-operated, as built in June, 1908, and operating it by a sprocket and chain, would say that it's more than three times the cost to operate a two roll reversible wringer, including the mechanism for it, than it is to add an extra roll and operate it direct from the lower shaft either by belt or sprocket chain (63); but in both cases we had to use either a belt or a sprocket chain to actuate the wringer (64).

Deposition
Alva J.

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The device that you now show to me, consisting of a housing, a shaft, three bevel gears, a clutch on the shaft and a bell-crank lever to move the clutch, is the reversing mechanism that we use on the machines which we manufacture at present. It is the same as we made in the summer of 1908; in fact, it is the same as the first machine we made, with the absence of the cam wheel and the fly-wheel. The small gear on the inside, which drives the cylinder, is also missing (65); it is a physical embodiment of the parts shown in the drawing of my application, *Defendant's Exhibit No. 1*, bearing the numerals 22, 35, 36, 38, 42 and 98 (66); this device is a full sized, the same as we put it on the market (67); it is the device that operates the drum of the washing machines and reverses it automatically (68); on the end of this bell-crank lever in this device there is an anti-friction roller. In the full size machine this roller engages with the groove 91 in the cam 80. 103 is the roller (69); when I used this device for reversing the wringer in June, 1908, I made it the same as this device here before us, except that it was smaller in size, and excepting, as already stated, that the arm controlling the clutch was not a bell-crank but extended straight out and had a handle on it (70); in the use of this device to operate the washing machine tub the closed part of the housing is uppermost (71); in attaching this reversing device to the lower wringer roll, I placed the lower open-end of the housing out towards the operator. The lever which operated the clutch stood in the same position, or in other words in a horizontal position towards the operator (72); so that what would be the sides of the housing of this reversing device before us, when in position to operate and reverse the washing machine tub, because the top and bottom

of the housing when this reversing device was used to reverse the wringer (73). Deposition
Alva J.

By Mr. Brown: Defendant's solicitor here offers in evidence, as an exhibit, the reversing device of the Fisher-Thor Washing Machine of the Hurley company, and the same is identified with this record, — "*Defendant's Exhibit No. 2—Fisher-Thor-Hurley-Reversing Device, Grace A. Southwell, Notary Public.*" Exhibit

Continuing, the witness Fisher said: I have testified that this reversing device, Defendant's Exhibit No. 2, when operated by the cam 80 of my patent reverses the operation of the cylinder or drum at every ninth rotation of the drum, and that this same device, but of a smaller size, was used, hand-operated, to reverse the direction of rotation of the wringer rolls. I do not want the court to understand that the wringer rolls had to be rotated nine, or any number of times, in one direction, the same as the washing machine cylinder before we could reverse them by this mechanism. In reversing the wringer rolls by the hand-lever, which operates the clutch, the reversing is wholly in the control of the operator. You can reverse it as often as you like (74); you will understand that the same reversing device, that is, three bevel gears with a sliding clutch as shown in this Defendant's Exhibit No. 2, can be used to operate the reversing of the shaft at will by the movement of the hand lever, or it can be operated to reverse automatically by a cam. The number of rotations before reversing, therefore, depends on whether the power that moves the lever on the clutch is hand operated or machine operated. If the sliding clutch is operated by a cam wheel, it will reverse at regular intervals, and if oper-

ated by hand it can be reversed at will (75); a reversing device comprising three bevel gears, the two facing gears having clutch teeth, and a sliding clutch to alternately engage these teeth, such as shown in this Defendant's Exhibit No. 2, is an old and well known reversing device in the machine art, that's one of the oldest types for reversing shafting for various purposes (76); It is one of the most common reversing devices known in the machine art. I should think it has been extensively used—long before I ever had anything to do with washing machines (77).

The two catalogues, each bearing the name on the cover, "Hurley Laundry Electric Equipment Thor," and one bearing on the introduction page the designation "Catalog A, 1912," and the other bearing the designation on the introduction page, "Catalog G," illustrate the Thor washing machine with the three roll wringer, as originally put out by the Hurley Manufacturing Company, and also the Thor washing machine with a two roll wringer and reversing mechanism as put out and sold by the Hurley Company.

In catalogue A the three roll wringer is shown on page 5, also on pages 7, 8, 9, 11, 12, 13 and 14; and in this same catalogue A, on page 16 is shown a dolly type reversible wringer with two rolls; and on page 17, a dolly type, two roll reversible wringer. These two machines shown on pages 16 and 17 have two roll reversible wringers operated by two spur gears and two sprocket wheels working in conjunction with each other.

In Catalogue G, a two roll reversible wringer is shown on page 6, also on pages 7, 8, 9, 10, 11, 13, 14, 15, 17, 19; and two on page 21. In this same Catalogue G, there are two dolly type washing machines that have two roll re-

versible wringers operated by a sprocket chain and two sprocket wheels and two spur gears working in conjunction with each other (78).

By Mr. Brown: The two catalogues of the Hurley Machine Company are offered in evidence as exhibits, same are fastened together and marked "*Defendant's Exhibit No. 3—Hurley Catalogs. Grace A. Southwell, Notary Public.*"

Continuing, the witness Fisher said:

The catalogues that I have just identified show two roll wringers with a mechanical reversing device. It was about three years after we began selling the three roll wringers, I think, that we put out the two roll wringer machine with the mechanical reversing device shown in these catalogues (79).

When I said that the question of cost entered into our decision to build a three roll wringer for the market instead of putting on the market the two roll reversing wringer machine that you had constructed in June, 1908, I did not mean merely the original cost of the two different devices. There are other elements of cost which come along later that we had to consider. The first cost is greater to reverse a two roll wringer with the mechanism that we used. The cost is also greater, of maintaining these parts (which is a part of the guarantee of our machine) for a period of one year to eighteen months. We furnish free of charge any part or parts of our machine that give out within the period mentioned. All of these points have bearing on the cost of maintaining the machines sold (80); it is and has been the custom of the Hurley Machine Company to maintain in stock the various parts of its machines, not merely for manu-

facturing new machines, but also for the purpose of supplying the repair parts that you have mentioned. We have to take that into consideration. However, the parts are run through in large numbers and as the number of machines we get on the market increases, the repair liability increases also in proportion (81); in the application that I filed for washing machines, as shown in Complainant's Exhibit No. 1, I made no claim directed solely to the reversing device like Defendant's Exhibit No. 2, except as that reversing device was in combination with other elements.

That part of the art was old to me and I didn't think it was patentable. In fact, we have capping machines in our factory that have the same bevel gear and clutch that are operated by hand (82); and when I used this old reversing device to operate the two-roll wringer, I didn't apply for a patent on that in combination with the wringer, for the same reason. Without the association of the automatically moved cam wheel to reverse it, I didn't consider it patentable (83); I mean that the hand-operated three gear and clutch reverser, as applied to the wringer, I did not consider to be patentable (84); I have never had any business relations or associations with the defendant, E. E. Johnson, of Peoria, Illinois; or with the White Lily Manufacturing Company, the manufacturer of the machine used by said Johnson Company and which machine is in controversy here (85); nor has the Hurley Machine Company, so far as I know (86).

"By Mr. Brown: Q. 87. Mr. Fisher, I want to ask you, as a mechanic, to assume that you have a motor driven agitator type of washing machine and a motor driven reversible two-roll wringer machine, standing side by side in your shop, and then to state

whether or not, in your opinion, as a mechanic, it would require any invention or anything more than mechanical skill to combine the two separate machines in one structure and run the agitator washing machine and the reversing wringer from a common motor or a common drive shaft? Depo-
Alva

By Mr. Orwig: Question is objected to as leading and suggestive and as calling for a legal conclusion or opinion. Question is further objected to as being vaguely indefinite.

A. As you put the question, it is merely a question of application, so far as I can see it, combining both appliances on one machine.

Q. 88. At or before the time that you made your reversible wringer machine in June, 1908, had you ever heard of William F. Phillips, of Newton, Iowa, or any invention that he was working on or had obtained that related to reversing wringer machines?

A. No, sir.

Q. 89. When did you first hear that William F. Phillips had obtained a patent on such a machine, if you remember?

A. About two years ago."

Direct examination closed.

Cross-Examination by Mr. Orwig.

It was in May, 1908, that I brought my washing machine to the office of Poole & Brown in Chicago for the purpose of obtaining a patent, which patent was finally issued to me on August 9, 1910 (X-Q. 90); I then explained the machine in the office of Poole & Brown to Mr. Hall, Mr. Mehlhope and Mr. Brown (X-Q. 91); I do not recall the reason why this application was not filed until the latter part of September of that year (X-Q. 92); I was called over from time to time after the first interview. I cannot recall the date when I first saw the completed drawings (X-Q. 93); I do not know the date when I signed my application for this patent (X-Q. 94). Cro-
nat-
Alv

The Hurley Machine Company were formerly manufacturing floor scrapers, and in October, 1907, when the money panic started, the factory shut down completely, and did not start in operation until the following March, 1908, when we commenced to manufacture our first washing machines (X-Q. 95); I am the Alva J. Fisher who, in October, 1912, testified as a witness in the case of the Grinnell Washing Machine Company against Woodrow and others, which testimony was taken in the Marquette building, and in which case you cross-examined me as a witness (X-Q. 96).

"By Mr. Orwig: X-Q. 97. At that time, as I remember it, you were asked whether or not you had any records or data of any sort that would enable you to positively fix the date when you made this reversing gear for a wringer, about which you testified then and about which you have testified here. As I remember it, you stated that you had no such records or data. Since that time have you been able to discover any such records or data?

A. There are no records or data that I can recall that would fix it, other than my memory.

X-Q. 98. As I remember, in your testimony in this former case you stated that you did not know that any of the parts of this reverse gear for the wringer that you testified about were then in existence. Have you since that time been able to find any of these parts?

A. No, sir, we have no parts of our original experimental machine that I know of.

X-Q. 99. Please state fully the circumstances which led up to your disclosure of this reverse gear for a wringer to Col. Brown?

A. Col. Brown called at our factory Wednesday or Thursday of last week and asked me what had been done in the manufacturing of our machines and wringers which led up to the information given him and to the information which I am now giving.

X-Q. 100. In this machine which you say was constructed in 1908 having a reverse gear device on the wringer, did you employ a housing or frame like the one before you, Defendant's Exhibit No. 2?

A. Not exactly. No, sir. It was of a similar form and arranged to contain the gears with a hand-lever operated clutch."

It was a housing specially constructed for the purpose of being used for a reverse mechanism for the wringer rolls (X-Q. 101); it was smaller; lighter in weight than this one (X-Q. 102); it was made of cast iron (X-Q. 103); the patterns for it were specially constructed for use in connection with a wringer. Temporary patterns were made (X-Q. 104); the reasons we had for abandoning the reverse gear mechanism for the wringer and using instead the three-roll wringer, was as I have stated in my direct examination, the two-roll wringer reverser was more expensive to build, more complicated to operate, more expensive to maintain during the time of the guarantee; whereas, the three-roll wringer required no mechanism to pass the clothes from one side of the machine to the other through the wringer rolls. We considered it a much cheaper way of doing it (X-Q. 105); the question of cost being the principal reason why we abandoned the reverse gear mechanism for the wringer (X-Q. 106); the other reasons I have just stated. It was a more complicated arrangement for arriving at the same results attained with a three-roll wringer (X-Q. 107).

Cross-examination closed.

Redirect Examination by Mr. Brown.

I think that last Thursday, June 11th, was the first time that I ever talked with Col. Brown about having made a machine in June, 1908, with a reversing wringer (RD-Q. 108); I have no way of fixing the date, April 13, 1908, when I finished the construction of the first machine that is illustrated in Complainant's Exhibit No. 1, other than distinctly remembering when we started up the first machine, in April, 1908, April 13, 1908 (109); it was either Saturday or Sunday (110); Mr. Neal C. Hurley was present at that time (111); Mr. Hurley, Mr. Schmetzer and Mr. Geisler, knew at the time that I had made a washing machine with a reversing wringer. Mr. L. D. Allen, of the Allen Electric Co., who made us the first small motors and located in the same building that we were, saw this a number of times. Mr. Allen at the present time is located, I think, in West Virginia; has charge of a large power plant (112); I do not think that Mr. George Plamondon saw my reversing wringer machine of June, 1908 (113); I do not know whether Mr. Charles Plamondon saw that machine (114); the Hurley Machine Company moved from the shop where I built the machine with a reversible wringer in June, 1908, to our present location five years ago last May (115); that would be May, 1909. I think it's five years ago last May that we moved into our present location (116); the reversing wringer machine of June, 1908, was built in the old location and not in the present location (117).

Examination closed.

(Signed) Alva J. Fisher.

And, thereupon, TORRIS H. ALFREDS, a witness produced on behalf of the defendant, having been first duly cautioned and sworn, upon oath, testified on direct examination as follows:

Depositor
Torris
Alfreds

My name is Torris H. Alfreds; age, 31; residence, 2528 N. Talman avenue, Chicago, and my occupation, draftsman (Q. 1); I am employed at the present time at 808 Marquette building, Chicago (2); I was employed in the year 1908 by Poole & Brown, 808 Marquette building, Chicago (3), as a draftsman (4); I had to do with the preparation of Patent Office drawings in the matter of the application of Alva J. Fisher, Serial No. 455,028 for Drive Mechanism for Washing Machines, a copy of which has been introduced in evidence as Defendant's Exhibit No. 1, now shown me. I made the sketches from the machine and assisted in laying out the drawings and inking the same. The machine at the time the sketches were made was located in the basement of a building at Canal and Adams streets, Chicago. I made the sketches of the drawings direct from the machine and after the sketches were made I came to the office and with the help of a Mr. Daggett made the drawings from which these blue prints were made. This was in the month of May, 1908 (5); Mr. Daggett was the draftsman who assisted me in the preparation of drawings at that time, owing to the rush of business and was employed by us for some time. His first name was Tine (6); our facsimile signatures appear on these drawings under the name "Witnesses" (7); Col. Brown signed the name of Poole & Brown, as attorneys, to these drawings (8); the date when the Patent Office drawings were completed, was

June 29, 1908 (9); I fix the date in May, 1908, when I began the sketches on this machine and the date June 29, 1908, when the Patent Office drawings were completed by a record book which I have in which I enter the name of the inventor and the invention and the date on which the application was ordered, and when the drawings are finished I also note in the same book the date on which they are finished (10); the entries in this record book are as follows:

"Fisher, Alva J.
Washing Machine
Recd. May 08 finished June 29 08.
Daggett, Draftsman.
Fisher, Alva J.
Mechanical Movement.
Recd. May 08 Finished June 29 08
Daggett, Draftsman" (11).

This book is part of the regular records of this office and was in 1908 part of the regular records of Poole & Brown.

This book is a record of the applications received and of the time so received and also the date upon which the drawings were finished and the time it took to make the drawings, and if the drawings were made with outside assistance the name of the assistant draftsman was also noted. The entries in this book are my own (12); the entry in this case was started in May and finished at the time the drawings were finished (13); Poole & Brown had a file wrapper on which was printed the title page. The firm of Brown & Mehlhope use a similar file wrapper, and on the inside of the back cover was printed with

the aid of a rubber stamp a form which in this case reads as follows:

Deposition
Torris H.
Alfreds

"Name as Signed	Alva J. Fisher
Date Signed	Sept. 5, 1908.
P. O. Address	153 So. Jefferson St., Chicago, Ill.
Witnesses {	William L. Hall George B. Wilkins.
Notary	William L. Hall" (14).

This record shows that Alva J. Fisher signed the application in question on Sept. 5, 1908 (15); we have always followed the rule that when the drawings are in pencil, the inventor is requested to go over the drawings and see if they are correct and meet with his approval before putting on the ink. We have always followed this rule, and I believe that in this case, as well as in all others, that the inventor saw the drawings while the same were in pencil and O. K.'d the drawings, after which they were finished (Q. 16).

Direct examination closed.

Cross-examination waived.

(Signed) TORRIS H. ALFREDS.

And, thereupon, Louis Schmetzer, a witness produced on behalf of defendant, having been first duly cautioned and sworn, upon oath, testified on direct examination as follows:

My name is Louis Schmetzer; I am 36 years of age, and my residence is at 2165 Wilson avenue, Chicago (Q.1); I am manager of the American Wringer Company, Chicago branch (2); our office is located in Chicago at 15 E. Lake street (3); I have been connected with this company sixteen years (4); have been manager of the Chicago branch fourteen years (5); the factory of the American Wringer Company is at Woonsocket, R. I., and the general offices are in New York City (6); the company has a branch office in San Francisco (7); and the business of the American Wringer Company is that of manufacturing clothes wringers, clothes mangles and rubber rolls (8).

The American Wringer Company has sold three roll wringers to the Hurley Machine Company, the first sale being made about September 1, 1908 (9); seven three roll wringers were sold to the Hurley Company on the first order. There was an order following, about the 19th of September, 1908, for about five hundred three roll wringers (10); they were to be used on their electrical washing machines (11); Thor Electric was the trade name of that machine (12); our company has continued since September, 1908, to sell three roll wringers to the Hurley Company (13); after September, 1908, we have had calls for three roll wringers from other manufacturers of washing machine, but did not sell them (14); because the three roll wringer was the device of the Hurley Man-

ufacturing Company, and we considered it a part of their patents or rights (15).

Deposition
of Louis
Schmetzer

Before our company made three roll wringers for the Hurley Machine Company it had never manufactured and sold any three roll wringers to anybody else (16); and before our company made three roll wringers for the Hurley Machine Company three roll wringers were never manufactured by other manufacturers of wringers, to my knowledge (17); our company is the largest of its kind in the world (18); I personally took the order for the first three roll wringers sold to the Hurley Company (19); and before taking this order I had seen the Thor Electric washing machine on which the Hurley Company intended to use these three roll wringers (20); I saw that machine more than once—a number of times (21); I first saw that machine in March, 1908 (22); I know Alva J. Fisher, the superintendent of the Hurley Machine Company (23); I knew him to be the inventor of the machine (24); I have seen a Thor washing machine, in the year 1908, equipped with a two roll wringer (25); that machine had a gear box on the crank side for reversing the wringer (26); I mean the crank side of the wringer (27); I don't remember to have seen that machine more than once, but believe so (28).

About mid-summer, or July, 1908, as nearly as I can state, is the date when I saw that Thor machine with the reversing mechanism or gear box on the crank side of the wringer (29); it was located, when I first saw it, in the Hurley Machine Company's factory (30); besides myself there was present at that time Mr. Geo. H. Jantz of the American Wringer Company and Mr. Fisher; also I believe Mr. Hurley (31); at that time I examined the mechanism that was in this gear box on the wringer. I

understood it to be for the purpose of reversing the wringer (32); the purpose of it, and possibly the mechanism was explained to me by Mr. Fisher at that time (33); I am not sufficient of a mechanic to explain to the court at this time what that mechanism was (34); looking at the gear box and mechanism before me (which has been introduced in evidence as Defendant's Exhibit No. 2) I state that the casing appears to be similar, as well as some of the other parts, to the mechanism that I saw at that time on the crank side of the wringer (35); at the time I and Mr. Jantz saw this reversing gear box on the crank side of the wringer at the Hurley shops in the summer of 1908, I believe some criticism was made as to having too much machinery attached to the wringer (36); I think Mr. Jantz made that criticism (37); he made it in my presence and hearing (38).

The difference in cost to the Hurley Company, in the summer and early fall of 1908, between one of our two roll wringers of the type to which this gear box was attached, and the cost of our three roll wringers which we supplied them in September, 1908, was about one dollar (39); I have never testified in court, or in any court proceeding, before today concerning the matter upon which I have here testified (40); I am acquainted with Mr. Ralph Orwig, Mr. W. V. Tefft, the attorneys for the complainant, and with Mr. Fellows, who is present in this room, who is connected with the Grinnell Washing Machine Company (41); I first met these gentlemen yesterday (42); in the conversation with them the matter of my proposed testimony in this case was mentioned (43); neither of them seriously suggested to me that it would please them if I did not go on the witness stand at all, or if I did that

I should be neutral in the matter and not help one side or the other, or anything to that effect (44).

"Q. 45. But they suggested that, did they not?

A. I couldn't call it a suggestion.

Q. 46. About how long was your conference with them yesterday?

A. Possibly a quarter of an hour."

In giving the dates that I have given in my testimony, I have relied upon our office records (47); I first talked with you (Col. Brown) about this case, at my office yesterday noon (48); for about ten minutes (49); after I had had a talk with the other gentlemen mentioned (50); I next talked with you about this matter just before stepping into this examination room (51); neither I nor the company by whom I am employed is connected, directly or indirectly with either of the following concerns, namely: the Grinnell Washing Machine Company, of Grinnell, Iowa; E. E. Johnson Company, of Peoria, Illinois; and the White Lily Manufacturing Company, of Davenport, Iowa (52); and I am not interested, directly or indirectly, in the outcome of this litigation, which I am informed is brought on the Phillips patent for a washing machine combined with a wringer having a reversing gear (53).

Direct examination closed.

Cross-Examination by Mr. Orwig.

"X-Q. 54. At this interview which you have referred to which occurred yesterday morning between yourself, Mr. Fellows, Mr. Tefft and myself, who was it that first suggested that you should assume a neutral position in regard to this controversy? Was it yourself or one of the three other men whose names are mentioned?

A. I really don't remember that.

X-Q. 55. Was there any suggestion made by Mr. Fellows, Mr. Tefft or myself that you refrain from testifying at all, and that if you did testify you should testify to anything but the truth, the whole truth and nothing but the truth?

A. No.

X-Q. 56. Was anything said at that conference that has caused you to testify in this case in any manner different than what you would have testified if you had not seen us?

A. No.

X-Q. 57. How many wringers of the three roll type did your company deliver to the Hurley Machine Company in the year 1909?

By Mr. Brown: The question is objected to first for the reason that it is not proper cross-examination; second, because it is immaterial to any issue in this case, and, therefore, incompetent; and, third, on the general ground that it calls for disclosure of business relations between two concerns not parties to this suit and which relations are of more or less of a confidential nature. If the complainant's counsel desires simply general information, as to whether the volume of such sales were large or small or something of that sort, I will not regard the last objection as serious, but I do not believe it is proper to ask the witness to disclose the amount of trade he had at any particular period of time between his company and one of its customers."

A. I could not tell without my records.

These records are at our office (X-Q. 58); there is nothing in these records I have referred to that states when I saw a reverse gear for the wringer in the Hurley machine shop in 1908 (X-Q. 59); the records enabled me to approximately find the date (X-Q. 60); the first orders given me for three roll wringers enables me to fix the date, approximately (X-Q. 61); I did not bring these records with me because I was not asked to (X-Q. 62); I was not asked to (X-Q. 63); our company sold to the

Hurley Machine Company a comparatively large number of three roll wringers during the year 1909 (X-Q. 64); this number larger than the number we sold to them in 1908 (X-Q. 65); we sold more to them of the three roll wringers in 1910 than in 1909 (X-Q. 66); I believe that in 1911 they practically used a two roll wringer entirely (X-Q. 67); we sold them in 1912 less of the three roll wringers than in 1911 (X-Q. 68); in 1913, they used a two roll wringer entirely (X-Q. 69) and in this year (1914) about the same as 1913 (X-Q. 70); same as 1913. During the year 1909 I believe our company received requests from other than the Hurley Washing Machine Company for a three roll wringer (X-Q. 71); I could not say positively, if any such requests were received in 1910 (X-Q. 72); to my knowledge they did not (X-Q. 73); they received no such requests since that time, not to my knowledge (X-Q. 74); during the last two or three years practically all of the wringers which we furnished to the Hurley Company have been intended for use with a reversing gear device for the two roll wringers (X-Q. 75); the device before me, known as Defendant's Exhibit No. 2, appears to be similar to the device I saw on the wringer of Mr. Fisher's machine in 1908 (X-Q. 76); I cannot point out, at this time, any differences in this entire device, Defendant's Exhibit 2, over the device I saw on Mr. Fisher's machine in 1908 (X-Q. 77); Mr. Fisher's machine in 1908, that had a reversing gear for the wringer was in the Hurley factory and I believe was demonstrated in operation. I do not remember whether any clothes were being wrung (X-Q. 78); this machine was demonstrated to me (X-Q. 79). When I saw this machine of Mr. Fisher's I personally urged him to go ahead with the manufacture and sale of similar machines

(X-Q. 80); he was quite enthusiastic about it (X-Q. 81); Mr. Fisher explained to me why he abandoned the idea of using a reverse gear mechanism for the two roll wringer (X-Q. 82); he called me over to the Hurley factory one day and showed me a three roll wringer that he had made out of a two roll wringer and explained that there would be a great saving in cost by using an extra roll in the wringer in place of a reversing arrangement (X-Q. 83); I do not remember that he told me that he would drop the idea of a reverse gear for the two roll wringer and take up the three roll wringer idea, but I received the first order for the three roll wringers about that time (X-Q. 84); the question of cost as between the reverse gear two roll wringer and the three roll wringer was the only question discussed between us as to why Mr. Fisher proposed to abandon the reverse gear mechanism and take up the three roll wringer (X-Q. 85); the three roll wringers cost Mr. Fisher in 1908 about one dollar more than two roll wringers would have cost (X-Q. 86); describing the machine of Mr. Fisher's which I saw in 1908, as I recollect, there was a belt drive from the motor to the cylinder mechanism and then some gearing arrangement that operated the wringer (X-Q. 87); that is as fully as I can describe it (X-Q. 88).

In this machine that I have been discussing, the cylinder and wringer could run at the same time or independently, as desired (X-Q. 89); the mechanism by which this result was obtained, was by the use of a belt drive from the motor, and from that by the reversing arrangement on the cylinder and on the wringer (X-Q. 90).

That is as near as I can remember it (X-Q. 91); I visited the office of the Hurley Machine Company fre-

quently in the year 1908 (X-Q. 92); I furnished them their first wringers, about March, 1908 (X-Q. 93); furnished at that time, one or two (X-Q. 94); these were used for experimental purposes (X-Q. 95); the wringer that had the reverse gear mechanism on it was in the rear of the Hurley factory or machine shop, near the rear windows (X-Q. 96); I think it was the fourth floor, but I'm not sure (X-Q. 97); this was the part of the factory where Mr. Fisher and others made their experimental machines and tested them (X-Q. 98); a person ordinarily would get into this part of the factory from the street, by taking the elevator to the office and factory floor; after leaving the elevator, turning to the right into the anteroom of the Hurley offices, the offices being on the right hand side and the door to the factory on the left. This door was locked on the inside, and after being admitted it was necessary to walk through the machine shop to the rear of the floor, where the experimental work was being done (X-Q. 99).

Cross-examination closed—examination closed.

(Signed) LOUIS SCHMETZER.

And, thereupon, FRANK E. GEISLER, a witness produced on behalf of defendant, having been first duly cautioned and sworn, testified upon direct examination as follows:

My name is Frank E. Geisler (1); I am 33 years old (2); I live at 6102 S. Halsted street, Chicago, Illinois (3); I am a machinist (4); I am employed at the present time by the Hurley Machine Company (5); and have been so employed for six years (6); I entered the employ of that company June 26 or 27, 1908 (7); I fix that date because I got my first pay July 3rd (8); I was paid in what they called "clearing house certificates." I had been working for the National Car Advertising Company, and they paid every two weeks in that scrip money, and I quit there on May 15th. And between that time and the time I came to work for the Hurley Company I was out of work, and the first pay I drew from the Hurley Company was on the 3rd of July, and that was in currency, and for that reason I remember the circumstance. I was out of work at that time for about five weeks and that was the only five weeks I was out of work (9); I had been getting from the National Car Advertising Co. five dollars a day (10); I was employed in June, 1908, by the Hurley Machine Company as a machinist (11); A. J. Fisher was in charge of the factory at that time and he is now (12); when first employed by the Hurley Company in June, 1908, I worked as a general machinist (13).

"Q. 14. Did you at that time work on any part of a machine that Mr. Fisher was working on for the purpose of having a reversing device on the two-roll

wringer to a power-driven washing machine, and if so, what work did you do?

By Mr. Orwig: The question is objected to as leading and suggestive.

By Mr. Brown: The question is withdrawn.

Q. 15. Did you, in the summer of 1908, when first employed by the Hurley Company, work on anything connected with a washing machine, and if so, state what you did?

A. Why, I worked on intermediate gears, fly-wheel gears, cam-wheel gears, cam wheels; I worked on another gear and two clutch gears, a main clutch and a smaller clutch.

Q. 16. What were the smaller gears and the smaller clutch you refer to used for?

A. They were for the wringer reverse."

I did the lathe work on these small gears and small clutch (17); the box and gears now in front of me, introduced in evidence and marked Defendant's Exhibit No. 2, are the housing and mechanism to drive the washer of the Thor electric machine (18); I worked on mechanism of this character for the Hurley people when I first went to work there (19); I saw the small gears and small clutch that I worked on after they were put on a wringer machine (20); there was a housing on the small reversing parts for the wringer (21).

"Q. 22. In what way was that housing different from the housing of the larger gears like Defendant's Exhibit No. 2?

By Mr. Orwig: This entire line of examination is objected to as leading and suggestive. Counsel is testifying and getting witness to simply corroborate counsel's testimony.

By Mr. Brown: Question is withdrawn.

Q. 23. Mr. Geisler, it has been testified to in this case that a washing machine, motor-driven, with a two roll wringer, having a reversing device, was constructed by Mr. A. J. Fisher. Do you know anything about any such machine, and if so, what do you know?

A. By Mr. Orwig: This question is objected to as grossly leading. Complainants can see no reason why the witness cannot be permitted to describe any machine he may know about himself, and counsel for defendant is warned that if this line of examination is continued in, the motion will be made to produce this witness before the court, so that complainant's rights may be protected.

By Mr. Brown: Notice is here given by defendant's counsel, that the further examination of this witness will be conducted in open court at Springfield, upon the trial of this cause."

An adjournment was, therefore, taken until Thursday, June 18, 1914, at Springfield, Illinois, in the court room of the United States District Court before his Honor, Judge Humphrey, at 10 o'clock in the forenoon, or as soon thereafter as counsel can be heard.

(Signed) GRACE A. SOUTHWELL,

Notary Public.

Notarial certificate in usual form, dated June 17, 1914.

XIV. Defendant's *prima facie* proofs:

"By Col. Brown: I desire to open the envelope containing the depositions taken at Chicago under order of court, and I now offer in evidence the depositions of Alva J. Fisher, Torris H. Alfreds, Louis Schmetzer, and a portion of the deposition of Frank E. Geisler, to and including question 22, and I will put Mr. Geisler on the witness stand, and resume his examination here.

I also introduce in evidence the exhibits identified during the taking of these depositions, as follows:

Defendant's Exhibit No. 1, copy Fisher original Patent application;

Defendant's Exhibit No. 2, Fisher-Thor-Hurley reversing device;

Defendant's Exhibit No. 3, Hurley catalogues; the latter being two catalogues, bound together as one

exhibit, each of these exhibits being identified further by the signature of the notary."

Deposition
Frank E.
Geisler

Following the reading of his deposition taken in Chicago, the examination of Frank E. Geisler was resumed; retaking of oath waived by court and counsel.

I am the same Frank E. Geisler who was sworn as a witness in this case in Chicago (1); my examination was not then completed (2); I have heard the questions and answers of so much of my deposition as was taken in Chicago (3).

Q. 5. Mr. Geisler, did you at any time see Mr. Alva J. Fisher working upon or having a washing machine with a wringer attachment and a device for reversing the wringer, the washing machine and the wringer both being driven from the motor?

Counsel for complainant: Objected to as leading and suggestive; this is simply a deduction from the evidence that Col. Brown wishes to be brought into the case.

The Court: He is your witness.

Mr. Brown: I asked if he ever saw such a machine.

The Court: But the question is leading; if he saw him working on anything he may tell you what he saw.

Mr. Brown: I withdraw the question.

The first time I went to work with the Hurley Machine Co., Mr. Fisher was working on a washing machine (6); I did part of the work on that same machine (7); I worked on the housing for the washer. I worked on the fly wheel gear, intermediate gear, cam wheel gears, shafts, bushings, fly wheels, cam wheels, eccentric gears, bell crank, bell crank post; for the wringer I worked on the intermediate gear and the two clutch gears, the main clutch, the bell crank post and the lever and two pulleys (8).

“Q. 9. Referring now only to those parts that you have mentioned in your last answer, that were for the wringer, what work did you do on the intermediate gear? What was the nature of the work?

A. It was lathe work—turning.

Q. 10. And what work did you do on the two clutch gears?

A. Boring, reaming, facing and drilling.

Q. 11. And what work did you do on the main clutch?

A. Turning, boring, reaming, grooving, drilling and facing.

Q. 12. And what did you do with the bell crank lever post?

A. I drilled two holes in it—tapped it.

Q. 13. You said something of the handle for this post; what was that?

A. It was made out of 1 inch by a quarter inch cold rolled steel.

Q. 14. And about how long was that handle bar?

A. About nine inches, I would judge.

Q. 15. Did you have anything to do with the assembling of the parts you have testified you worked on, for the wringer mechanism?

A. I did a little; Mr. Fisher did the principal part of it.

Q. 16. Where was the assembling done?

A. Jefferson and Quincy street, in the Jefferson building, in the machine shop.

Q. 17. Where was that room where this assembling took place with reference to where you were working?

A. The same room.

Q. 18. State whether or not you saw Mr. Fisher assembling these parts you worked on, for the wringer mechanism?

A. Yes, sir.

Q. 19. State whether or not you saw the parts for the wringer that you had worked on, after they had been assembled, in operation?

A. Yes, sir.

Q. 20. When these parts that you had worked on for the wringer device were assembled and operated, how did they operate; what did they do?

A. They reversed the wringer.

Q. 21. How was that accomplished?

A. By moving a lever from one side to another—about nine inches long.

Q. 22. When that lever was moved in one direction, what happened?

A. When you wrung the clothes from the tub, it would wring the clothes out."

When the lever was moved the mechanism would start wringing (23). The lever was connected with and moved the main clutch (24). The main clutch would engage with the clutch gear (25).

"Q. 26. And when the lever was moved in the other direction, where would the clutch engage?

A. It was engaged with the other gear.

Q. 27. And did it remain in engagement with the first gear or disengagement?

A. No, it would disengage.

Q. 28. Please look at Defendant's Exhibit No. 2, on the desk, and explain to the court how that clutch mechanism is operated by using this device as a model?

A. We had what I call a miniature; it was cut down to half size. We had this one part of the housing cut off; the tongue that held the cam wheel hanger. We had this—the bell crank post. It was made smaller. Through the bell crank post we had the lever which was nine inches long. When we put the lever to the right, the wringer rolls would go in one direction; when we put the lever to the left, the wringer rolls would go in the opposite direction.

Q. 29. You may state whether or not the distance between the two opposite clutches on the facing sides of the two bevel gears was the same or a greater distance than the total length of the clutch?

A. Yes, sir; we allowed one-half inch.

Q. 30. Why did you allow the one-half inch play between those two distances?

A. When we disengaged the one gear from the other, so they would not catch.

Q. 31. Could the clutch be moved by the hand lever so that neither of the two gears would be engaged with the opposite ends of the clutch?

A. Yes, sir.

Q. 32. In other words, it could be moved in a neutral position?

A. Yes, sir.

Q. 33. When in a neutral position, what happened to the wringer?

A. The wringer stopped.

Q. 34. Now then, on the machine you have been describing, that is the Fisher machine, with the parts you worked on and described, state whether or not there was any device or arrangement for locking the lever into any one of these three positions named?

By Mr. Orwig: Objected to as leading.

By the Court: The witness may answer.

A. We had what we called a quadrant; it would be a quarter of a circle, with three notches.

Q. 35. What were the three notches for?

A. The center notch was for neutral; the other two outside notches were for right or left hand drives, whichever way the wringer wanted to run."

The quadrant was positioned out where the bell crank post was located on the housing (36).

The quadrant was engaged by the handle (37).

"By the Court: You called it a lever before."

I worked on this machine or the parts I have just described with respect to the reversing of the wringer June 26th or 27th, of 1908 (38). The washing machine that had this reversing wringer device I have been describing was the Thor (39). It was a tumble barrel washing machine, as we called it. It made nine revolutions in one direction and then nine in the other (40). It was re-

versed from one direction to another with a cam wheel (41).

Deposition
Frank E.
Geisler

"Q. 42. You have spoken of this Exhibit No. 2, as being on the washing machine?

A. Washing machine housing, yes, sir.

Q. 43. What was the purpose of this mechanism?

A. For driving the tumbling barrel."

The motive power of this washing machine was an electric motor (44) connected with the washing machine by what we called a jack shaft (45). The connection between the motor and the washing machine was by belt (46). The wringer was operated from this same motor (47). The wringer was operated by the jack shaft, the same jack shaft that was connected to the washing machine (48, 49). In that machine we had a motor for a prime mover that operated the washing machine and wringer, and we had the jack shaft for the wringer (50). I have been working for the Hurley Company ever since 1908 (51).

"Q. 52. Do you know anything about the price of motors at present time, of such size as are adapted for washing machines?

A. Yes, sir.

Q. 53. What do they cost at this time, about?

A. The motors cost \$8 to \$15. Some motors cost \$10, \$12 and \$15. It is all according to the order we put through to the motor people.

Q. 54. You mean the size of the order—you mean the price of the motor is dependent on the size of the order?

By the Court: Always the same sized motor—

A. No, sir; of different sizes.

Q. 55. But for any one size, it depends on the size of the order?

A. Yes, sir.

Q. 56. Are you familiar with the prices of similar motors, in 1908?

A. Yes, sir.

Q. 57. What did they cost at that time?

A. They cost \$15, \$18 and \$25.

Q. 58. Did you know at the time why Mr. Fisher or the Hurley Machine Co. discarded the reversing wringer mechanism you have been testifying about and used a three roll wringer for reversing?

A. Well, they did not discard it.

Q. 59. Well, they did not put it on the market at that time?

A. No, they did not.

Q. 60. Why not?

A. It was too clumsy.

Q. 61. Do you remember seeing the machine after it was assembled, with the wringer device on which you worked, in the shop, for any particular length of time before it was dismantled?

A. Yes, sir.

Q. 62. Do you remember whether or not a man named Schmetzer was ever in the shop to look at that machine?

A. Mr. Schmetzer brought up some two roll wringers for us.

Q. 63. Do you know whether Mr. Schmetzer saw that machine after it was assembled with the reverse wringer?

A. I cannot tell that—whether he saw it or not.

Q. 64. Do you know that he was there in the shop from time to time?

A. Yes, sir.

Direct examination closed.

Cross-Examination by Mr. Orwig.

X-Q. 65. Have you any records with you that will enable you to refresh your recollection as to the time when this transaction occurred in regard to the alleged reversible wringer which you have been testifying about?

A. No, sir.

X-Q. 66. Did the Hurley Machine Co. keep any books or records that would enable them to show when you started to work there?

A. Not unless it would be a time book."

I am pretty sure they must have kept a time book (67). If they have it, there is no reason why they should not produce it—if they have it now (68). I have not referred to that time book or any other record in regard to this matter (69).

“Q. 70. Were you asked to do so to try to refresh your recollection as to the time this transaction occurred, by anybody?

A. No.”

I have no record of my own that would show when I went to work at the Hurley Machine Co.’s shop, no day book nor memo book of any kind (71).

“X-Q. 72. How do you know that this was on the 26th or 27th of June, 1908?

A. The first pay I received from the Hurley Machine Co. was the day before the 4th of July, which if I remember correctly, was on a Saturday or Sunday. I remember that I got paid the day before the 4th, went out on the 4th of July and I paid \$3.50 for a straw hat, and the hat blew off and a horse rode over the new straw hat; that is one reason.

X-Q. 73. Is it not very likely that this 4th of July occurred in 1909 instead of 1908?

A. No, sir.

X-Q. 74. You have only your recollection to go by in that matter, is that right?

A. I know positively.

X-Q. 75. What was the first work you did in connection with this reverse mechanism for the wringer?

A. The first work I did was to turn out five of these eccentric gears.

X-Q. 76. Is that work you did for the reverse mechanism for the wringer?

A. No, sir.

X-Q. 77. My question was in regard to the wringer. When was this work done?

A. That was about two days after I was there. The work was to bore, ream and face off the main gears—clutch gears.

X-Q. 78. That would be the two bevel gears?

A. The bevel gears—eccentric gears, the two bevel gears, but they didn't have this eccentric on.

X-Q. 79. You say that was two days after you went to work there?

A. Yes.

X-Q. 80. The next work was to do what?

A. To turn up the intermediate gear.

X-Q. 81. When was that?

A. The same day.

X-Q. 82. Did you do all this work in one day that you did on this reverse mechanism?

A. No, it took me two days.

X-Q. 83. You say you assisted Mr. Fisher in assembling that device?

A. Yes, sir.

X-Q. 84. When was it assembled?

A. It was assembled around—we had the device on the wringer about two days before I got paid.

X-Q. 85. That would be say the first or second of July?

A. Yes, sir.

X-Q. 86. Did Mr. Fisher have some other reverse gear mechanism for the wringer of this kind, to your knowledge, at about this same time?

A. Not that I know of.

X-Q. 87. If Mr. Alva J. Fisher testified that he had this reverse gear mechanism for the wringer that you have described, completed and tested in May, 1908, would that be truthful so far as you know?

Mr. Brown: I object to the question. There is nothing in the record to show Mr. Fisher so testified. It is an unfair question; it is an attempt to trap the witness, to get him to contradict his own superintendent on an assumed date.

The Court: I do not remember the testimony.

Mr. Brown: His testimony was June.

Mr. Orwig: I will withdraw the question and ask another one.

X-Q. 88. In the testimony of Mr. Alva J. Fisher, in the case of Grinnell Washing Machine Co. *vs.*—

By Col. Brown: I object; counsel had Mr. Fisher on the stand in Chicago and asked him if he had testified in a former case and there stopped; did not cross-examine him as to this point. He cannot impeach the testimony of Mr. Fisher now through another witness, by reading an alleged deposition taken in another state, which alleged deposition is not before this court in any way, shape or manner. He had his opportunity to impeach the witness at the time.

By Mr. Orwig: Mr. Fisher's testimony gave different dates for this thing and I wanted to show the facts—

By the Court: Did you question Mr. Fisher on those subjects last Monday?

By Mr. Orwig: I asked him if he had any way of fixing his dates and I think he stated he knew it was in June. This witness testified it is in July.

By the Court: Did you undertake to impeach Fisher by former testimony?

By Mr. Orwig: No, I did not do it.

By the Court: I do not think you could do it by a third witness.

By Mr. Orwig: I am trying to prove this witness has no clear and definite way of fixing these dates and he has read the testimony of Fisher and is testifying therefrom.

By the Court: You may ask him now if he has read the Fisher testimony.

X-Q. 89. Did you know that Mr. Fisher testified in this case and stated that he had made this reverse gear mechanism in June, 1908?

A. No.

X-Q. 90. You are testifying however, that as far as your recollection goes, it was not in June, 1908, that this reverse mechanism was built?

A. I know it was about four days after I went to work for the Hurley Machine Co. that we had the reverse mechanism for the wringer completed, and on the wringer.

X-Q. 91. That would make it in July, 1908?

A. I do not know how many days there were in June—I went to work on the 26th or 27th of June, in

1908; that would be four days, which would bring it into the first of July. I am not positive how many days June has.

By Col. Brown: He means working days."

Schmetzer brought some two roll wringers to the Hurley shop the first day I was there (92). I think he brought three at the time (93).

"X-Q. 94. And were any of those, or one of the two roll wringers used in this reversing mechanism you have described?

A. Yes, sir.

X-Q. 95. You know of no reason except because the reversing gear mechanism you have been describing for the wringer was too clumsy, that it was abandoned by Mr. Fisher; any other reason than that?

A. By the time we got through and the machine work figured up, we figured out a three roll wringer was more simple, more economical, cheaper; we got the same results from it.

X-Q. 96. When did you figure this out in regard to the three roll wringer; how long after you were there?

A. That was about two to two and a half weeks, I think. After that we figured out the three roll wringer would be the best. It was when Mr. Neal Hurley came up to the shop.

X-Q. 97. You say the reverse gear mechanism that you have been testifying about was too clumsy; didn't you also say it was about half of the size of the exhibit before you?

A. Yes, sir. It was not quite half—not exactly half; that would make it pretty small. It was what we call half size.

X-Q. 98. Would that make the reverse gear mechanism about the same size as the reverse gear mechanism on this exhibit machine of the Automatic Electric Washer Co.?

A. It was a different kind.

X-Q. 99. The question was about the size?

A. Yes, it would—about the same size.

X-Q. 100. You think, however, this is too clumsy on here, this reverse gear mechanism?

A. Yes, sir.

X-Q. 101. You think the fact that it was too clumsy had anything to do with the abandoning by Mr. Fisher?

A. Yes, sir.

X-Q. 102. You have testified also that another reason why it was abandoned, was because it was too expensive?

A. Yes, sir.

X-Q. 103. In figuring this matter of expense, you have compared it with the three roll wringer?

A. Yes, sir.

X-Q. 104. Do you still insist that in order to make a gearing device like the Defendant's Exhibit No. 2, though only one-half of the same size, it would cost more to construct and maintain such a reverse gearing device, than it would to purchase an extra roll for the wringer?

A. Yes, sir.

X-Q. 105. Approximately how much would it cost to build a reverse gear device like Defendant's Exhibit No. 2, only about half of the size?

A. At the time, the device cost about \$5.60 to build.

X-Q. 106. You mean to say that experimental device made for the wringer?

A. No, no; the experimental device for the wringer would cost more than that, but we figured it out the way we worked it, it would come to \$5.60.

X-Q. 107. That is to say, it would cost your company about \$5.60 to make a reverse gear mechanism like Defendant's Exhibit No. 2, but only half of the size?

A. Yes, sir.

X-Q. 108. Are you in making this estimate, figuring that the bevel gear wheels are cut gears or just cast gears?

A. The gears are cut.

X-Q. 109. Are the bevel gears in this Exhibit No. 2 cut or cast?

A. They are cast.

X-Q. 110. Is it your opinion as a mechanic, in 1908, the cheapest construction of a reversing gear mechanism, like Defendant's Exhibit No. 2, but only half of the size thereof, would cost more than \$1 to make, if made in reasonably large quantities?

A. Yes, sir.

X-Q. 112. Could they be made in reasonably large quantities for less than \$5.60?

A. In reasonably large quantities, yes, sir; they could.

X-Q. 113. At how much could they be made at that time?

A. They could be made for as much as they are now; I got \$1.85 for the machine work alone; whatever the castings would come to is an over-head expense; that is, boring out the rough castings.

X-Q. 114. What kind of a reverse gear mechanism is it that you are talking about, as the kind you are making now?

A. I was talking about this—this housing here, Defendant's Exhibit No. 2.

X-Q. 115. Perhaps you do not understand my question. How much would it cost to make the reverse gearing device, like Defendant's Exhibit No. 2, but only half the size thereof, and of the kind you say were used in 1908 by Mr. Fisher, if such gearing device were made in reasonably large quantities?

A. About \$3.50.

X-Q. 116. Then when you said that such gears would cost \$5.60, you were not referring to the small sized gears for the wringer, were you?

A. No.

X-Q. 117. You think the cheapest price that a gearing device of that kind could have been made for in 1908, in reasonably large quantities, was \$3.50?

A. Yes, sir; from a manufacturing stand-point; to make thousands at a time.

X-Q. 118. Is your company now engaged in the manufacture of a reverse gear mechanism for the wringer, of the dolly type machine?

A. Yes, sir.

X-Q. 119. Withdrawn.

X-Q. 120. Are you familiar with the reverse gear mechanism used in the Red Electric Machine manufactured by the Hurley Machine Co.?

A. Yes, sir.

X-Q. 121. Approximately what does it cost to manufacture the reverse gearing for the wringer part of the "Red Electric"?

By Col. Brown: Do you mean the reverse gear for the washing machine or the reverse gear for the wringer?

By Mr. Orwig: Reverse gearing for the wringer.

By Col. Brown: Objected to as immaterial.

A. About 40 cents.

By Col. Brown: Defendant's counsel withdraws objections to the last question.

X-Q. 122. Have you with you any drawings or illustrations or models or anything else, by which you can identify or show to this court just what it was that was manufactured in the Hurley Machine Co. shop and which you have been describing as the reverse gear mechanism for the wringer?

A. No, sir.

X-Q. 123. Would you say the reverse gear mechanism for the wringer, the kind you say was made in 1908, was exactly like the Defendant's Exhibit No. 2, now before you, except as to its size and except for the parts that control the movement of the sliding clutch?

A. It was minus the bell crank and it had four little lugs on the back of it to bolt it onto the wringer. This oil cut was left out and this one was not on there at all. We had one of those little oil wicks coming up.

X-Q. 124. Did it have the housing substantially like the one on this Exhibit No. 2?

A. The back part of the housing was cut off and the part that held the cam wheel hanger was cut off.

X-Q. 125. Otherwise the housing was the same, was it?

A. Yes, sir.

X-Q. 126. With this sort of a housing, would you say that that reverse gear mechanism for the wringer was dangerous to the operator?

A. Yes, sir.

X-Q. 127. And you have stated that a special housing was made for this reverse gear mechanism for the wringer?

A. Yes, sir.

X-Q. 128. When you made a special housing for this reverse gear mechanism, why was not one made that would protect the operator or the clothes from engagement with the dangerous machinery?

A. I was not designing the machine at the time.

X-Q. 129. It would have been easy, however, if a special housing was being made for this machinery, to make one that would protect the operator and the clothes from the machinery, would it not?

By Col. Brown: Objected to as immaterial.

A. No, sir; it would not have been easy.

X-Q. 130. You have made no objection to the reverse gear on the ground that it was dangerous—you have never said it was dangerous, have you?

A. No, sir.

X-Q. 131. Did you personally ever use the wringer that you say had the clutch device on it, the reverse gearing device on it, in doing an actual washing and wringing operation?

A. Yes, sir.

X-Q. 132. When was this?

A. Well, it was about a month after I went to work for the Hurley Machine Co. We washed out our overalls in it.

Cross-examination closed.

Direct examination of FREDERICK S. UPTON, by defendant's counsel: Dep.
Frederick
Upton

My name is Frederick S. Upton; I reside at St. Joseph, Mich.; I am engaged in the manufacture of electric washing machines (1-3). The name of my concern is Upton Machine Company (4). The factory of that company is at St. Joseph, Mich. We dispose of our product both directly to the trade and to intermediate jobbers (6). The type of washing machine we sell is a cylinder machine and the cylinder or drum rotates back and forth (7). The drum rotates back and forth about thirty times a minute (8). The cylinder in which the clothes are placed does not make a complete revolution (9). Only a part of a revolution. It rotates on a figure 8; that is to say, the clothes are thrown in a figure 8; the cylinder does not revolve in a figure 8.

This machine is power driven (11).

“Q. 12. Have you one of said machines in court, and if so, please identify it?

A. Yes, sir; the machine by the door.

Q. 13. How long has that machine been manufactured by your company?

A. Three years, this spring; 1911.

Q. 14. What is the trade name of this machine?

A. The Federal and the Upton.

Q. 15. You have two names for the same machine?

A. Yes, sir.

Q. 16. How does that happen?

A. The name ‘Federal’ is applied to the machine sold by the Federal Sign System (Electric) and the machines we sell ourselves to the trade are known as the ‘Upton’ machine.

Q. 17. But they are the same machine?

A. Yes, sir; the same machine.

Q. 18. Which one is this in the court room?

A. It is a 'Federal.'

Q. 19. About how long has the Federal Co. been selling machines of this kind?

A. Three years—

By Col. Brown: The machine identified by the witness is offered in evidence as Defendant's Exhibit No. 9 and I will state that the purpose of the exhibit and the structure will be proven by another witness.

Direct examination closed.

No cross-examination."

Direct examination of ALBERT L. TUCKER, by Mr. Dep
Mehlhopa: ALB
Tuc

My name is Albert L. Tucker. I am fifty-three. I reside in Chicago. My business is consulting work in connection with the machinery for large building construction (1-4). I have been in this business five years (5). Prior to that time I was connected with the Western Electric Company in the electrical business (6). I graduated from the Worcester Polytechnic Institute in the mechanical engineering department and took the degree of bachelor of sciences; and I have been for a great many years in the electrical and mechanical business, but I never have qualified as an electrical engineer (7). I was connected with the Western Electric Company seventeen to eighteen years, in both the manufacturing and selling departments (8, 9). During the time I was connected with the Western Electric Company and since then, I have made it my business to keep in general touch and to become familiar in a general way at least, with the advance of electrical engineering and machines of an electrical character put on the market (10).

"Q. 11. State if you know, for how long a time small electric motors adapted for use in driving small machines like electric fans, washing machines, dental implements, etc., similar appliances, massage tools, have been on the market?

A. Small motors for the operation of electric fans have been on the market for a great many years; I should judge ever since at least 1890. At that time, the motors that were employed were for use on direct current; the alternating current motor having at that time not been developed. The general use of small motors for mechanical appliances was not very generally adopted for use until a great

many years after 1890 and I should judge from the best of my recollection, that it was subsequent to 1900, and the great use of motors for this purpose has been since 1905-6-7.

Q. 12. Why was it that along in 1905-6-7 this impetus you speak of occurred in the small electric motor field?

A. It is very difficult to state the exact reasons because there were a number of causes which are attributed to the fact that the motors have been brought into such general use. In the years before 1900, the cost of electric motors was rather high—it might be considered perhaps prohibitive for the ordinary person. As the electrical art developed, manufacturers were able to produce these motors in much larger quantities and to standardize them to certain speeds, which gradually reduced the cost, until now the cost is far below what it was prior to 1900; and there was another element, which brought the electric motor into favor and that was the gradually reducing cost of current. Prior to 1900, the cost of current was very much higher than it is now. The cost of current has been gradually reduced year by year, by the various concerns throughout the country, which has been caused by the great growth of current consuming devices, which has enabled them to work the cost down to a point where it is not prohibitive for an ordinary person to use the machines.

Q. 13. State what in your recollection, would be the relative cost of the early motors—those prior to 1900, with motors of the same capacity, of the present day.

A. I believe that the cost of small motors for alternating and direct current, of one-quarter horsepower and under, can be purchased for nearly half, if not quite half, at present time, of what they could be in 1904 and 1905.

Q. 14. Mr. Tucker, in 1908 and prior thereto, do you know of electric motors, either direct or alternating current motors, being manufactured that would reverse the direction of rotation of their

power shaft by means of a switch for example, on the motor itself?

A. Yes, I do.

Q. 15. Were those direct or alternating current motors?

A. Both.

Q. 16. In 1908, about what was the proportion of users throughout the country of alternating and direct current, and where were those different kinds of currents being used and for what purpose?

A. When the electric art first started and current was produced at large central stations, in big cities like Chicago and New York, it started as a direct current system, and the alternating current plants were not used very generally, excepting for lighting purposes, for the reason that in the early stages of the art, motors had not been designed which could be operated upon alternating current circuits. It was for this reason that the large centers used the direct current and at that time practically all the power work was done by direct current. It was not until later—subsequent to 1902, that alternating current began to be generally used for power as well as lighting purposes, and as the residence customers—that is customers in small towns—were fed by alternating current systems, they would probably in number out-number the number of consumers for direct current; I should judge, taking the country over, that there would be 75 per cent more customers for the alternating current than for the direct.

Q. 17. What was the reason that the alternating current system was so long in spreading to the residential portions of communities and outlying districts?

A. There was no difficulty in distributing alternating current to residences for lighting; the difficulty arose from the fact that it was impossible to furnish a motor and it was not until this art had been developed that the alternating current began to be favored materially.

Q. 18. So that the development of the alternat-

ing current motor brought about the development of the alternating system of lighting?

A. To a large extent, that is true.

The use of electric motors for driving shop tools and implements, at the earlier stages, was confined largely to the cities where direct current was used (19). After the electric motor art developed so that the use of small motors of the alternating type were being manufactured and at a fair price, then the use of those motors to drive small tools gave an impetus to that trade (20).

To Tesla is generally attributed the invention of the alternating current motor for use on two or three phase circuit, as well as on single phase circuits. I do not recall the exact time when his two and three phase patent expired; I think in 1907 or 8. I think the split-phase patents expired about 1912 (22).

“Q. 23. So it was about the time that the Tesla patents were expiring that the alternating motor for driving small tools came on the market in increasing quantities?

A. The two and three phase motors which Tesla invented were the first to come into great use and those patents expired several years before the split phase patents, which are the patents under which most of the small motors were built. Of course they came into general demand and the owners of those patents and the parties to whom they had issued licenses began to manufacture in large quantities, in 1905 and 1906. The general public were prohibited, that is, manufacturers were prohibited from manufacturing these motors until the patent expired, unless they obtained licenses.

Q. 24. And these motors that are used today, such as you see on these washing machines here in the court and used for massage implements and other small tools, are of this split-phase alternating current type?

A. I think most of these are the direct current, but the motors which would be used for this purpose on the alternating current would be the split-phase motor.

By Col. Brown: These machines are on alternating current because they are connected with the alternating current of this court room—only the one machine not being connected, because it is direct current.

Direct examination closed.

Cross-Examination by Mr. Orwig.

X-Q. 25. Is it equally practical to reverse the motion of a direct current motor and an alternating current motor by the use of a switch—an electric switch?

A. Either type can be reversed; it is rather a severe thing to do to any motor, especially if at the time of reversing, it is under load. An alternating current motor will start in the other direction; the direct current motor will start a little quicker under load than will an alternating current, and it will do so without much damage, although there is a liability of injury on account of the spark, even with a direct current motor, but an alternating current motor under load and reversed has a great tendency not to start.

X-Q. 26. How quickly in a motor of approximately the same kind as in the Complainant's Exhibit No. 1 and the Exhibit Defendant's Machine, before you, would the motor stop and again pick up and reverse its movement, if a switch were operated for that purpose?

A. Such machines as I have seen for that purpose are usually provided with a time element so that when the motor comes to rest and reverses, before the load is turned, the motor is given an opportunity to pick up speed and start in the opposite direction, by means of a toothed gear which gives the motor a chance to pick up. If the load is not excessive, the direct motor will start very quickly.

X-Q. 27. I will now operate the defendant's machine now before you, and illustrate the quickness with which the wringer rolls can be reversed by means of the mechanism provided for it, and will ask you whether or not the wringer rolls could be stopped, started and reversed with anything like this speed, if all of the reversal of the wringer rolls was accomplished by means of a reversible electric motor: and would it be as practical? (Demonstration of operation.)

A. I should say that the reversible electric motor might take a little longer to start and stop than would the mechanical reverse.

X-Q. 28. And if the motor was stopped and started under load in only a fraction of a second more time than I have illustrated here to you with regard to the mechanical reverse, would not that be severe upon the motor itself, if continued quite often?

A. If the motor is given time enough in reversing itself, to get its speed started in the opposite direction, it would not entail any great danger to the machine, in my opinion.

X-Q. 29. What do you mean by 'if the motor is given plenty of time' in your last answer? I would like to get a comparative statement as to how quickly a reverse could be made if we used a motor, as compared with the operation of that just made on this machine to you?

A. The speed with which an electric motor would stop when the current is shut off on the motor, would depend on the load which is going through the wringer. It might be brought to a standstill as quickly as this in the device you have shown me. On the reverse, as I stated before, the motor is given a time limit which enables its armature to revolve in the opposite direction, so as to get itself partly up to speed and the time in which they could come up to full speed depends on the load which is going through the wringer at that time.

X-Q. 30. Assume that the wringer had a normal load in it and the electric motor was running at its normal speed, under such conditions, how many

revolutions of the armature would be made after shutting off the current, before the armature fully stopped? Deposition
Albert
Tucker

A. It might turn anywhere from ten to twenty-five revolutions before being brought to a standstill.

X-Q. 31. How many revolutions would it make again before the power would be sufficient to start the movement of the wringer roll?

A. About the same."

Cross-examination closed.

Examination closed.

Direct examination of SAMUEL T. WHITE, by Col. Brown:

My name is Samuel Thomas White; I am forty-six; reside at Davenport, Iowa. I am engaged in manufacturing washing machines principally (1-4); my concern is the White Lily Manufacturing Company (5). That is the company that manufactured the machine known as the "White Lily Washer" and sold to the E. F. Johnson Co., defendant in this case (6).

"Q. 7. Please look at the machine which I now show to you and ask you what that machine is and when that machine was first manufactured?

A. You mean this new machine brought in here?

Q. 8. This new exhibit.

A. That is known as our 'Hummer' machine."

This machine was patented on June 13, 1903, manufactured—the first of these machines were put out of the shop on the 14th day of January, 1903; we made and shipped them before the patent was issued (9). At the time we shipped it in 1903 it did not have an electric motor as is now on the machine before me; it was a hand machine (10).

"Q. 11. You operated the red fly-wheel with a handle on the spoke?

A. Yes."

We first equipped this machine with an electric motor, in November, 1904. With a little exception—instead of this fly-wheel being on the lower shaft, it was on the main drive shaft (12).

The first time we equipped one with an electric motor was in November, 1904. I personally went to the Em-

erson Company, manufacturers of electric motors, at St. Louis, Mo., and went to their sales manager and told them that I wanted to get a motor to run a washing machine. At first he laughed at me; no such thing had ever been thought of, as an electric motor to run a washing machine. I told him I thought a business could be developed along that line and we got shipped from them on November 4, 1904, one electric motor (13).

We equipped that motor to one of our hand-power machines and then I went again in January to St. Louis, and had them ship two motors to me at Kansas City, where I put on a demonstration of electric washing machines—rather, electrically driven washing machines. That was at the Implement Dealers' Association meeting, which is held in January every year. We also had an exhibit in the Coates House (14).

This was in January, 1905. Instead of just having one exhibit that year at the Coates House, we engaged space at the Coliseum, and gave two exhibits, showing at the Coliseum one of our washing machines operated by electric motor and one by gasoline engine. We took the exhibit at the Coliseum for the simple reason that they would not allow us the machinery, motor or gasoline engine at the Coates House—consequently we had two exhibits (15).

"Q. 16. You say you purchased first one motor from the St. Louis house and equipped it to your then existing washing machine, in which the red fly-wheel was mounted not as in this exhibit, but on the horizontal drive shaft which is painted blue.

A. Correct.

Q. Did you put your motor direct to that fly-wheel at that time?

A. Yes, sir.

Q. And did not change the position of the fly-wheel, as you have it here?

A. Not at that time.

Q. 17. Then you equipped that same hand-driven machine with the two electric motors purchased after that first one mentioned—did you in that equipment change the position of the fly-wheel to the small shaft?

A. We still used it on the main shaft.

Q. 18. When did you first build a machine like this exhibit here with the red fly-wheel and pinion mounted on a short shaft positioned on the tub and the fly-wheel driven by an electric motor, the small gear on the short shaft engaging the gear on the outer end of the horizontal drive shaft?

A. I cannot get the exact dates, but I would say along in 1906. We only built a few of them special, where they wanted to open and close the lid without taking the belt off."

You can raise this machine on its hinges and in so raising said lid, the small gear on the horizontal shaft disengages from the gear on the fly-wheel shaft (19).

This machine as it stands here was built later; but I wanted to get the evidence of our building an electric washing machine and I just thought of this—telegraphed last night and they assembled this. There are some parts to this that were lined up in a hurry last night; that is of our structure as we are making our machine today. We had a few made with this gear wheel without the cogs on the inside as you will see here—just simply a pinion fastened on here, the same as our White Washer, obtained in 1908 (20).

"Q. 21. I understand you this identical structure we are talking about was only made last night?

A. Yes, put together last night.

Q. 22. The machine you were talking about two answers back, where the red fly-wheel was mounted on the short stub shaft, had a small pinion on the

inside of the fly-wheel hub, but did not have the bevel gear teeth that appear in this model?

A. Yes.

Q. 23. Those bevel gear teeth appear in your machine today and in assembling this machine last night, you took this pinion and bevel gear out of your present manufacturing stock in order to make this machine; in other words, without this bevel gear the machine is as you made it before?

A. In other words, my partner in business wired me that he could not find the old machines that were made and he went up in the attic and dug up the castings and got it together the best he could.

Q. 24. When did you first equip any kind of a washing machine with any kind of an electric motor to drive it?

A. November, 1904.

Q. 25. And what was the mechanism of that washing machine so far as was on top of the lid for purpose of running the agitator?

A. We have two types that come under this patent—one is known as the Plagman patent and the other as the Burton patent. The Plagman patent was in the Patent Office at the same time as the Burton patent and became an interference. We had already purchased the Plagman patent and then when it went into interference, purchased the Burton patent and had both allowed to us, June 13, 1903.

Q. 26. Please answer the question which is: with the machine which you first equipped with an electric motor, what construction did you have on top of the lid to drive the agitator?

A. A segmental rack running over and under a pinion, the same as this, only of the White Lily construction.

Q. 27. What is this construction in this machine? Is this the Burton, Plagman or White Lily?

A. This is the Burton. Instead of the segmental rack sliding up and down on the shaft, it was hinged at the frame and dropped over and under the pinion.

Q. 28. When did you first build a machine having the mechanism on the top of the tub back as far as the end of this horizontal drive shaft shown in this model; when did you first build that?

A. We first built that in 1903.

Q. 29. What is the difference between the machine we have been discussing, in the mechanism for driving the agitator with the fly-wheel and the motor, from the exhibit, defendant's machine?

A. Absolutely none; in fact, we use the same gearing exactly in both machines.

Q. 30. The exhibit, defendant's machine, has in addition to the parts that you have indicated on the first machine, the mechanism for reversing the wringer, and a wringer, has it not?

A. Yes, sir.

Q. 31. With the exception of the wringer and the parts for reversing the wringer, this defendant's machine and the machine you have just brought in, are the same?

A. Exactly.

Q. 32. And that machine you brought in and were talking about, you made first in 1904, was motor driven?

A. In 1904; and exhibited in 1905, January.

By Mr. Orwig: The question is objected to and move that the answer be stricken; he has described several times that that machine here is not exactly like the one he made in 1903 and 1904 and the question is leading and improper.

By Col. Brown: Defendant's counsel offers the machine identified by the witness in evidence, same to be marked 'Defendant's Exhibit 9, White First Motor Machine.'

By Mr. Orwig: The introduction of this machine is objected to as having no bearing on the case, when it was made up last night, according to the witness' statement, and using simply a few parts of this machine which is here in suit, as defendant's machine.

By the Court: I doubt, Mr. Brown, whether you are entitled to have that. I do not think I could pick out now what the differences are between the machine offered and the machine he made in 1904; I am sure I could not do it tomorrow, when it has gotten a little colder, even if I would read his testimony. It is pretty badly jumbled. You are entitled to have everything that is well described.

By Col. Brown: I want to say to the court that I am not offering this machine or attempting to offer it for the purpose of showing any anticipation, because it has no wringer or reversing device on it at all. My only purpose was to give an illustration of the general kind of machine which this witness has testified to he has made in 1904, first operated by a motor. I want to bring the evidence in that as early as 1904, he made a machine with a wringer.

By the Court: Now, you are asking to put in a machine made part at that time and part made last night.

By Col. Brown: I am not putting in as a machine made at that time.

By the Court: What purpose have you beyond the fact?

By Col. Brown: As I read his testimony, he had a machine, power-driven washer, the same as this machine here; the only difference being in the detail of the reversing gear, but the general arrangement of the driving mechanism—

By Mr. White: If necessary, I can produce the identical machine inside of half an hour.

By the Court: I will have to sustain the objection to this machine going in as an exhibit; I do not think it a proper exhibit. The fact you are entitled to and the fact you have, in the testimony.

Q. 33. When did you first build a machine like Complainant's Exhibit Defendant's Machine, having the parts now mounted on the lid of this machine, on the horizontal drive shaft, the red fly-wheel and its associated parts and the motor, and without the wringer and reversing gear?

A. I could not give the exact dates; I think the only ones we built were just a few special, in 1905 and 1906. We kept no records because we could not create a demand at that time.

Q. 34. What reason have you for thinking it was in 1905 and 1906?

A. For the simple reason that in 1905 I experimented—showing these machines at Kansas City, and wanted to see if there was a market for a power

driven machine, but owing to the fact that the currents through the majority of cities in the country were only night currents, we found it a matter of impossibility to find a market at that time; also the use of gasoline engines was not developed and there was no market for them. Another reason was that the price of washing machines at that time was so that they retailed at the price of \$6.50; a year or so afterward they raised to \$10—that is by some improvements being put on. They finally got up to \$15 on a water motor, and along 1908-9 and 10, the trade began to see the value in a washing machine and we were able to get prices that warranted us in putting an electric machine on the market, which we did not at the time I experimented.

We built one or two of those, but discarded them because there was no invention about it—it was only a question of putting a spur gear on there to run it so you could open the lid. We didn't have a catch on top to fasten the lid down on the side. We build a machine today on the same principle exactly."

This implement dealers' convention, where we exhibited these two machines, was held January, 1905, at Kansas City. It was January 16, 1905, that I got the motors to build it (35, 36). We bought eight of the electric motors during that winter and paid \$19.80, f. o. b. St. Louis (37). The price of motors at the present day is less than \$12. I am not sure exactly what our contract is, but I think it is \$11.70 or something like that (38).

Direct examination closed.

"Cross-Examination by Mr. Orwig.

X-Q. 39. If you bought about eight motors in a year, at present time, could you buy them for about \$12 a piece?

A. No, I don't think you could.

Cross-examination closed.

Examination closed."

Direct examination of PROF. JOHN H. KINEALY, by
Mr. Mehlhope:

My name is John Henry Kinealy; I am fifty years of age; my residence is at Ferguson, St. Louis county, Missouri. I am a mechanical engineer (1, 2); I graduated from the department of mechanical engineering of Washington University, St. Louis, Mo., in 1884. Since that time I have been following the calling or profession of an engineer; from 1892 until 1902 I was professor of mechanical engineering at Washington University, St. Louis, Mo. During the last fourteen to fifteen years, I have been called upon in addition to other work, to act as expert in patent causes, and I have testified in a number of cases before the United States courts, in which patents and patent matters were involved (3). I have testified in one case in which gearing for washing machines was involved. The title of the case was the Iowa Washing Machine Co. *vs.* Wells H. Press Company, and in which the Schoonover patent was involved. I have also testified in the case of the Grinnell Washing Machine Co. *vs.* Newton Washing Machine Co., in which the Phillips patent here in suit was involved. I also gave a deposition in the case of the Iowa Washing Machine Co. *vs.* Saecker, in which the Victor patent was involved. I have also testified in a number of cases, two I believe, in which motors to be used for operating washing machines were involved (4). I am familiar with the Phillips patent, No. 950,402—that is the patent in suit. I have examined and do understand the construction and operation of the washing machine, "Complainant's Exhibit, Defendant's Machine," machine referred to in your question (6).

The Phillips patent here in suit is for a gearing device which the patentee in the specification, page 1, lines 10 to 13, states is especially designed for use in operating washing machines and wringers, by means of power applied by an electric motor or other source of power. The patentee also states that one of the objects of his invention was to provide a device that could be "easily applied to any of the ordinary machines of the class described" (Specification, page 1, lines 17-19).

In describing the gearing device which forms the subject of the patent, the patentee shows it as applied to one form only of washing machines equipped with a wringer, and this form is that in which there is provided in the center of the tub, which is of circular form, an upright shaft, by means of which the clothes in the tub are swirled or worked around, back and forth, through and in the water in the tub, in order that the water might penetrate the clothes and force the dirt out from the interstices. This washing machine, which is used in the drawings of the patent to illustrate the gearing device is of the kind known as the Dolly washing machine. There are, I may say, a number of different kinds of washing machines, named or called according to the way in which they act on the clothing, in order to clean them. There are two kinds which are rather closely related, they being the dolly type and the drum type. In both of these types, the clothing is washed by being made to revolve or be swirled back and forth in the water by an alternating, rotary motion being given to the operating shaft.

Referring now to the machine Complainant's Exhibit No. 1, I will not enter into a long description of the different parts, as that has already been done by Mr. McElroy, the complainant's expert, but I will point out a

number of features which I think should be pointed out to the court and which Mr. McElroy failed to so point out.

The machine of the exhibit is a machine operated by an electric motor which is fastened to and carried by the tub of the machine. It will be understood, however, that while the drawings of the patent show an electric motor fastened to the machine and carried by the washer, the gearing is not limited to the use of a washing machine in which the source of power is an electric motor, since the specification specifically states in the quotation I have already made, that the washing machine and wringer may be operated by power applied by an electric motor or other source of power.

The machine of the exhibit has the motor placed beneath the tub and there is a belt running from the wheel on the motor shaft up to a belt wheel which is carried by a stub shaft fastened to a plate which is placed on the tub. This plate is placed on the top of the tub and on a part that is stationary; that is to say, the top of the tub is made up of a stationary portion and a portion that may be lifted, the portion that may be lifted being called the cover or lid.

By means of suitable gearing, motion is transmitted from the large belt wheel to a power shaft, that on the exhibit is indicated by the numeral 15, just exactly as it is on the drawings of the patent. This power shaft is a horizontal shaft and is carried by the bars formed on this place which is placed on the tub, which forms the support of the gearing. The hinges for the cover are located with respect to the cover or lid, so that the power shaft 15 is parallel to the line of the hinges, so that when the cover or lid is raised, the top of the machine separates along the line parallel to the power shaft.

Carried by the power shaft there is a gear wheel or pinion rather, which engages with a gear wheel 44, which is mounted on a short shaft 43 which short shaft is supported in bearings carried by the cover or lid of the machine. This short shaft 43, like the power shaft 15, is a horizontal shaft and it is also parallel to the power shaft. The gears 40 and 44 are so adjusted with respect to the hinges, or I should say the hinges are so adjusted with respect to the power shaft, that when the cover is raised, there is a physical separation between the gear 40 and 44 and thus when the cover is raised, the connection between the power shaft and the central shaft which I will speak of later, is broken, and power is not then transmitted from the power shaft to the gear 44. This gear 44 carries a pin to which is fastened one end of a pitman 48 and the other end of this pitman is fastened to a pin on a rack bar. This rack bar carries teeth which engage with a pinion 46 attached to the upper end of the dolly shaft. This dolly shaft projects downwardly through the middle of the tub of the machine and carries at its lower part that part which is known as the dolly. This dolly is equipped with fingers which engage with the clothes and the dolly shaft is made to revolve or rotate these fingers, carrying the clothes back and forth through the water, and thus the clothes are cleaned.

The object of the pitman and the gear wheel 44 is to translate or change the motion of continuous rotation of the power shaft into a reciprocating motion, and this reciprocating motion is transmitted to the rack bar and by means of the rack bar and the gear wheel 46 this reciprocating motion is transmitted to what is termed an alternating rotary motion which is given to the dolly shaft. The number of rotations or alternations made by

the dolly shaft will depend upon the speed of the power shaft and upon the relative sizes of the gears 40 and 44; and the number of revolutions or parts of revolutions made by the dolly shaft will depend upon the size of the gear wheel 48 fixed at the top of the dolly shaft and upon the length of travel in one direction of the rack bar; the length of time of the rack bar will depend on the position of the pin on the gear wheel 44 to which the pitman 48 is attached. Attached to the top of the washing machine and placed at right angles to the line of the hinges and at right angles to the direction of the power shaft, there is a wringer, and by means of suitable gearing, motion is transmitted from the power shaft to the wringer shaft, and thus the wringer is made to revolve.

This gearing or mechanism by means of which motion is transmitted from the power shaft to the wringer, comprises as a part a reversing mechanism whereby the motion of the wringer may be made such that the wringer will revolve first in one direction and then in another direction. This reversing mechanism also is so made that it can be put in neutral position and then the wringer will be stopped.

In the drawings of the patent it will be seen that the operating shaft of the wringer, which is indicated by the numeral 39, is placed not only at right angles to the power shaft, but in a horizontal plane different from the power shaft; that is to say, the wringer shaft 39, as shown in the drawings of the patent, is higher or further above the top of the tub than the power shaft, but in the Exhibit No. 1, of the complainant, this wringer shaft is in substantially the same horizontal plane as the power shaft.

The precise form of reversing mechanism shown on the drawings of the Phillips patent is the one that is

used in Complainant's Exhibit No. 1, and it consists of three bevel gears, one of which 15^a is fixed to the end of the power shaft 15, and this bevel gear engages with two other bevel gears or mitre gears rather, each of which is loosely mounted on a shaft 24, arranged in the same plane as the power shaft 15, but at right angles to the power shaft.

The drawings of the Phillips patent, like Complainant's Exhibit No. 1, show only one upright or vertical shaft, that being the shaft that serves as the dolly shaft, and the drawings and the exhibit show five horizontal shafts, one being the shaft 15 which is the drive shaft; the other being the stub shaft 18 upon which the band wheel or fly wheel revolves; the third being the shaft 43 which is arranged parallel to the shaft 15 and which carries the gear wheel 44; the fourth horizontal shaft is the shaft 26 which is arranged at right angles to the power shaft and in the same plane exactly as the power shaft; the fifth horizontal shaft is the shaft 39, which is arranged at right angles to the power shaft, and in the drawings, in a plane different from the power shaft, although in the exhibit, substantially the same as the plane of the power shaft.

That is all I have to say in regard to the machine of the patent (7).

Referring now to Complainant's Exhibit, defendant's machine, and comparing that with the alleged embodiment of the complainant's patent, as illustrated in Complainant's Exhibit No. 1:

I do not think it is necessary for me to explain in detail the different mechanisms of the defendant's machine, but I wish to point out those points in which the two ma-

chines are alike and those points in which they are different.

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First, it is evident that both machines have a support, which is the tub. Both machines have a vertical shaft arranged at the middle of the tub and which serves to drive the dolly. Both machines carry an electric motor and both machines have a band wheel or fly wheel which is connected to the motor by means of a belt. In the machine of the defendant, the belt wheel is mounted on a stub shaft just exactly as in the case of the Phillips machine and this belt wheel carries on its hub a gear wheel or pinion, just as in the case of the Phillips machine. In the case of the defendant's machine, however, the pinion on the hub of the band wheel engages directly with the gear by which motion is transmitted to the vertical central shaft instead of engaging with a gear wheel which is mounted on a shaft that serves as a common drive shaft for the vertical dolly shaft and for the wringer shaft. The shaft on which the band wheel of the defendant's machine is mounted is arranged not at one side of the tub, but almost horizontally with the tub, so that if prolonged it would pass through the middle of the tub and through the dolly shaft. It is arranged also so that it is parallel to the line of the hinges.

Now the mechanism by which motion is transmitted from the band wheel from the vertical shaft of the defendant's machine is very different in appearance and in operation from the mechanism by which motion is transmitted from the drive wheel of the complainant's machine to the vertical dolly shaft. The parts bear different relations to one another and they operate in a different way.

of H. I do not think it is necessary for me to point out the differences in that mechanism because that has already been shown.

The wringer of the defendant's machine is arranged parallel to the line of the hinges and parallel to the shaft of the band wheel which may be called the drive shaft, and the mechanism by which motion is communicated from the power shaft of the defendant's machine to the wringer shaft is the ordinary mechanism, such as is used to communicate motion from one shaft to another shaft parallel to it; whereas in the complainant's machine it is such as must be used to communicate motion from a shaft to another shaft at right angles to it.

The defendant's machine has a reversing mechanism by which the motion of the wringer may be stopped or started or may be made to run in either direction.

If we assume that the front of the machine is that place at which the operator stands, it is seen that in the case of the defendant's machine, the band wheel and the power shaft is at the back of the machine; the wringer is at the left and the cover when raised or open is at the right hand side of the machine. The lever or handle by which the reversing mechanism of the wringer is operated is at the left of the machine. In the case of the complainant's machine, the driving shaft with its mechanism is at the back of the machine and the cover when raised is also at the back of the machine, and the wringer is on the right side of the machine. The lever by which the reversing is made is on the right side of the machine, back of the wringer.

In the case of the defendant's machine, one standing at the front of the machine would naturally take the clothes from the tub and pass it into the wringer by means

of the right hand; it would be inconvenient to do it with the left hand. In the case of the complainant's machine, since the wringer is on the right hand, it is rather inconvenient to put the clothes into the wringer with the right hand unless one moves around more to the left side of the tub. And, if while putting the clothes in the wringer of the complainant's machine with the right hand, the fingers should be caught in the wringer and held, one would have to reach with the left hand across or under the right arm in order to grasp the reversing mechanism, which is at the back of the wringer, in order to stop the machine and release the fingers. In the defendant's machine, the peculiar arrangement of the mechanism and the locating of the wringer on the left side of the machine, so that its operating shaft 39 is parallel to the drive shaft, enables one to easily reach the reversing mechanism, if the right hand should be caught in the rolls, since the reversing mechanism is at the left of the operator, so that there is less danger of one being injured in the defendant's machine than there is in the complainant's machine.

It is true of course that locating the machinery and arranging the parts to operate as in the defendant's machine, the opening into the tub is more restricted when the cover is raised than is the case in the machine of the patent. The controlling mechanism, that is to say, the mechanism by which the motion of continuous rotation of the drive shaft is changed into a reciprocating or alternating rotary motion of the vertical dolly shaft is very different in the defendant's machine from what it is in the complainant's machine, but the mechanisms of each machine have been fully described, so that I shall not speak of it at length (8).

Referring now to patent No. 57,348, dated August 21, 1866, granted to J. R. Madison, marked "Defendant's Exhibit No. 10, Madison Patent":

This Madison patent is for a washing machine and shows a tub O having mounted in it a vertical dolly shaft which carries at its upper end the gear wheel S. This wheel engages with a rack F which is driven by means of a pitman D connected to the crank C formed on a horizontal crank shaft. This crank is provided with a crank handle L at one end and at the other end it carries a gear wheel B which engages with the pinion K mounted on the fly wheel shaft M. A is the fly wheel mounted on the outer end of the shaft M. When the crank L is turned, the crank shaft is made to revolve and by means of the pitman B a reciprocating motion is given to the rack F, and by means of the gear wheel S an alternating rotary motion is given to the vertical dolly shaft.

This Madison patent shows a gearing for washing machines comprising a support, a horizontal drive shaft, a vertical dolly shaft and means whereby motion is communicated from the drive shaft to the vertical dolly shaft.

Referring to patent No. 699,185, granted May 1, 1902, to F. C. Kainer, entitled "Gearing for Washing Machines," marked "Defendant's Exhibit No. 11, Kainer Patent":

This Kainer patent shows a gearing for washing machines of the dolly type, and shows a tub A having mounted in the cover a vertical dolly shaft E and this vertical dolly has on its upper end outside of the tub a gear wheel E which engages with a rack H. This rack H is provided with a slot h through which the upper end of the vertical shaft E passes. The right hand end

of the rack H is provided with an opening through which is passed a pin g which is carried by the large bevel gear wheel F. The bevel gear wheel F revolves about the vertical stub shaft carried by the tub or cover of the machine. C² is a spur bevel wheel which is mounted on the power shaft C and which shaft carries the balance wheel C¹. The balance wheel is provided with a handle by which it may be made to rotate. When the balance wheel C¹ is made to rotate, motion is communicated by means of the shaft C and bevel pinion C³ to the bevel gear F and it is made to revolve in one direction. As it revolves, the rack bar H is moved back and forth and through the medium of the teeth on the rack bar and the gear wheel e, an alternating rotary motion is communicated to the vertical dolly shaft E. This Kainer patent shows a gearing for washing machines of the dolly type, comprising a power shaft, an upright shaft mounted in the support and means whereby an alternating rotary motion is communicated from the power shaft to the upright shaft (10).

In the Madison patent, the fly wheel A of the Madison patent is similar to the band wheel 20 of the complainant's machine, and the small pinion K of the Madison patent is similar to the pinion 17 of the complainant's machine. The gear wheel B of the Madison patent is similar to the gear wheel 16 of the complainant's machine. The pitman D and the rack bar F of the Madison patent are similar to the pitman 48 and the rack bar 47 of the complainant's machine.

In the case of the Madison patent, the pitman is connected to a crank instead of being connected to a gear wheel as in the complainant's machine. The pinion S fastened to the tub or upper end of the dolly shaft of

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^{of}
H. the Madison machine is similar to the pinion 46 placed at the upper end of the upright dolly shaft 45 of the complainant's machine.

Referring now to the Kainer patent, the power shaft C is not only similar to but is substantially the same as the stub shaft 18 of the complainant's machine, and the crank wheel C is substantially the same as the band wheel 20 of the complainant's machine.

I say these parts of the Kainer patent are the same as the parts of the complainant's machine, because in both cases the power is applied to the wheels and transmitted from the wheels to another device. In the case of the Madison patent that is not exactly so, since the fly wheel of the Madison patent has power transmitted to it from the crank shaft C; the power is not transmitted through the fly wheel.

The large bevel gear wheel F of the Kainer patent corresponds to the wheel 16 of the complainant's machine. The rack bar H of the Kainer patent and the pinion e with the dolly shaft E correspond to the rack bar 47 and the pinion 46 and the dolly shaft 45 of the complainant's machine. The means by which the motion is transmitted to this rack bar is somewhat different in the case of the Kainer machine from that used in the complainant's machine. I may point out also that in the case of the Madison patent, the hinges are arranged parallel to the drive shaft and the board for the wringer is shown at the left hand end of Figures 1 and 3. In the case of the Kainer patent, the cover is arranged to lift but the hinges are not shown, although they are mentioned in the specification (11).

Referring to patent 750,243, granted January 19, 1904, to F. T. Brosi, marked "Defendant's Exhibit No. 12, Brosi Patent":

This Brosi patent shows a gearing for washing machines, adapted to be used with washing machines of the dolly type. It comprises a band wheel or power wheel y, mounted on a power shaft x. This power shaft x carries on its inner end a spur pinion X' shown in Figure 2 and in this Figure it is marked X, although in the specification it is referred to as X'.

The pinion A' is mounted on a horizontal shaft A which carries at its inner end a star wheel or pinion i. The star wheel i engages with a segmental rack which is mounted on the upper end of the dolly shaft d. As a matter of fact, there are two racks marked respectively g and h, and the pinion i works between them in such a way that as the shaft a is made to revolve, an alternating rotary motion is given to the dolly shaft D. This mechanism of the Brosi patent is very similar indeed in appearance and in operation to the mechanism of the defendant's machine, whereby motion is transmitted to the vertical dolly shaft. The operating wheel y of the Brosi patent corresponds to the band wheel 20 of the defendant's machine, the pinion X' formed on the fly wheel stub shaft of the Brosi patent corresponds to the pinion 17 formed on the hub of the fly wheel of the defendant's machine. The pinion a' corresponds to the pinion mounted on the outer end of the horizontal shaft of the defendant's machine and the shaft a of the Brosi machine corresponds to the horizontal shaft of the defendant's machine.

The translating mechanism of the Brosi machine is somewhat different from the controlling mechanism of

the defendant's machine in its details, but in general this method of operation is the same as that of the defendant's. In both devices there is a wheel or pinion wheel mounted on the end of a horizontal shaft that engages with a segmental rack mounted on and carried by the vertical dolly shaft (12).

Referring to patent 708,444, granted September 2, 1902, to D. B. Willock, Reversing Mechanism for Washing Machines, marked "Defendant's Exhibit No. 13, Willock Patent":

This Willock patent shows a reversing mechanism for washing machines and it shows a washing machine which is driven by means of a motor 4; mounted on the shaft of the motor there is a pinion 10^d which engages with the pinion 10^c mounted on a shaft which carries on its inner end a bevel gear wheel 10^a. This bevel gear wheel engages with two bevel gears marked 2^b and 2^c, which are loosely mounted to revolve about the shaft 3; 7 is a clutch hub splined on the shaft 3 and movable longitudinally on the shaft between the bevel gears 2^b and 2^c. The hub 7 is provided with bevel faces 7^a and 6^a respectively, adapted to engage with the corresponding bevel portions formed on the gear wheels 2^c and 2^b. When the clutch hub 7 is moved longitudinally on the shaft, so as its bevel surface 7^a engages with the corresponding surface on the bevel wheel 2^c, the clutch mechanism carried by the bevel wheel 2^c which need not be described in detail, will be operated so as to make the wheel 2^c revolve with the clutch hub 7, and that means that the wheel 2^c will revolve with the shaft 3; so, too, if the hub be moved so that it contacts with the bevel gear 2^b, the bevel gear 2^b will be made to move with the hub and with the shaft 3, whereas the wheel 2^c will be released.

In this way, the shaft 3 will be driven by either one of the bevel wheels 2^b and 2^c. If driven by one, it will be revolved in one direction, and if driven by the other it will be revolved in the opposite direction. When either of these bevel wheels 2^b or 2^c is made to revolve, there is carried with it the worm 13, which engages with the worm wheel 12. This worm wheel carries a pin 14 which when revolved to a certain position, comes in contact with the surface of a cam 15, which is mounted so as to move back and forth at right angles to the shaft on which the wheel 12 is supported and about which it revolves. These are shown in detail in the various Figures—4 and 5. When the cam 15 is moved outwardly, it moves the bent lever 16 which is connected to the arm 16^b and as this lever is moved about its fulcrum, the arm 16^b is moved longitudinally of the shaft 3 and the arms carry at their inner ends friction rollers which engage in a grooved form on the clutch hub 7, and when the lever 16 is moved this clutch hub is moved in either direction, towards the bevel wheel 2^c or towards the bevel wheel 2^b, and thus makes the wheel towards which the clutch hub moves drive the shaft.

When the device is in operation, the shaft 3 is driven first in one direction and then is automatically reversed by means of reversing mechanism I have described, and the shaft 3 is driven in the opposite direction. The shaft 3 carries a pinion 19 which engages with the large spur wheel 20 which is mounted on the horizontal shaft of the washing machine. By means of the automatic clutch mechanism, the shaft of the washing machine which carries the pin 20 is automatically made to revolve a certain number of times in one direction and then in the other direction.

It will be noted that in the Willock patent, the bevel wheel 10^a is always engaging with the bevel wheels 2^b and 2^c, and when the clutch hub 7 is in neutral position, both of these wheels revolve without driving the shaft 3. In this respect this reversing mechanism is very similar to the reversing mechanism of the complainant's machine in which we have the bevel gear 15^a mounted on the power shaft and always in engagement with the gears 26 and 27, which are loosely mounted on the shaft 24. The clutch hub 7 of the Willock patent corresponds to the clutch hub 29 of the Phillips machine, as exemplified in Complainant's Exhibit No. 1, and the groove in the clutch hub of the Willock patent with the lever 16^b corresponds to the groove 30 and the upright arm 33 of the complainant's machine.

In the case of the defendant's machine, the bevel gears 26 and 27 are not loosely mounted on their shaft, but are rotatably attached to their shaft and always turned with it, and these gears are not always in engagement with the gear 15^a; in the defendant's machine, when the clutch hub is in a neutral position, the gear 15^a is out of engagement with both of the bevel gears and in this respect the reversing mechanism of the defendant's machine differs from the reversing mechanism of the Willock patent and of the complainant's machine (13).

Referring now to a book, entitled "507 Mechanical Movements," purporting to be copyrighted in 1868:

Movement No. 53 on page 18 of said "507 Mechanical Movements" is a reversing device whereby, as stated in the description of the movement, given on page 19, a vertical shaft is made to drive a horizontal one in either direction, as may be desired. The description given on

page 19 of this movement contains the following statement: Dep.
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“The gears on the horizontal shaft are loose and are driven in opposite directions by the third gear; the double clutch slides from a key or feather fixed on the horizontal shaft, which is made to rotate either to the right or left, according to the side on which it is engaged.”

The vertical shaft of this Movement 53 corresponds to the horizontal power shaft of the complainant's machine, and the bevel gear carried by the vertical shaft corresponds with the bevel gear 15^a of the complainant's machine. The bevel gears with which the gear on the vertical shaft engages and which are loosely mounted on the horizontal shaft, correspond to the gears 26 and 27 of the complainant's machine. The double clutch which is mounted to slide upon a key or feather fixed on the horizontal shaft of Movement 53 corresponds to the double clutch 29 which is adapted to slide upon a key or feather fixed on the horizontal shaft 24 of the complainant's machine.

It is evident that when the clutch is moved to engage with one of the bevel wheels on the horizontal shaft of this Movement 53, the horizontal shaft will be driven in one direction, and when the clutch is moved so as to release this wheel and engage with the opposite bevel wheel, the horizontal shaft will be driven in the opposite direction, just exactly as is the case in the complainant's machine (14).

I have here a drawing which is a copy on an enlarged scale of the figure contained in the book I have been referring to, which is marked “Defendant's Exhibit No. 14, Mechanical Movement 53,” and I have placed thereon

numbers indicating the parts of the Phillips patent which I have just stated are like the parts in this movement (15).

Referring to the drawing "Defendant's Exhibit No. 5": The gearing disclosed in said drawing is substantially the same as the gearing of the Phillips patent, except that the drawing shows two drive shafts, one of which is used to drive the dolly mechanism of the washing machine and the other, separate and distinct from the first, is used for driving the mechanism of the wringer. The driving mechanism for the dolly is very similar to the driving mechanism of the Madison and Kainer patents. It has the same straight rack bar that Madison has, but this rack bar is not connected to the main shaft directly by means of a pitman, but by means of an intermediate gearing. The driving mechanism for the wringer comprises a reversing gear which is almost exactly like the reversing gear of the Willock patent, except that the gearing of the drawing is hand-controlled instead of automatically controlled and operated, as in the case of the Willock patent (16).

Referring to the drawing marked "Defendant's Exhibit 6," and comparing it with the drawing I have just been referring to, namely, "Defendant's Exhibit No. 5":

The gearing of Defendant's Exhibit No. 5 is the one I described in the last previous question and the gearing of Defendant's Exhibit No. 6 is the same as that of Exhibit No. 5, except that the two shafts, 15 and 15^x have been connected by means of a band 21^x which passes over the pulley 20^x on the shaft 15^x and over a pulley 21^y on the shaft 15, this pulley 21^y not being pres-

ent on the gearing of Defendant's Exhibit No. 5. The gearing of Defendant's Exhibit No. 5 is adapted to be operated by two bands, one passing over the band wheel 20 and driving the washing machine mechanism; the other, separate and distinct from the first, passing over the pulley 20^x and driving the wringer mechanism.

In Defendant's Exhibit No. 6, the washing machine mechanism and the wringer mechanism are operated by means of a single band which is passed over the band wheel 20. This is made fast by connecting the drive shaft 15 to the drive shaft 15^x by means of the intermediate band 21^x. So far as the operation of the two gears is concerned, when the shafts 15 and 15^x are driven either by the separate bands as in the case of Defendant's Exhibit No. 5, or by means of the single band as in the case of Defendant's Exhibit No. 6, the dolly shaft operates in exactly the same way in both cases and the wringer operates in exactly the same way in both cases; there is no difference whatever in the operation of either the dolly or the wringer in the two exhibits (17).

"Q. 18. Can you point to any new result that would be accomplished in the gearing when made as disclosed in the drawing marked 'Defendant's Exhibit No. 6' as compared to what would be accomplished by the gearing as shown in Defendant's Exhibit No. 5?

A. No, sir; I can see no new result whatever accomplished by the gearing of Exhibit No. 6 over the gearing of Exhibit No. 5.

Q. 19. Are you familiar with machine shop practice?

A. Yes, sir.

Q. 20. Please describe to the court what you know about the manner of driving a number of machines from a single line shaft in a machine shop.

By the Court: I am quite familiar with the practice.

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A. It is quite common in machine shops to have a single drive shaft and by means of belts to connect this drive shaft to various kinds of machines and to operate these machines from this common drive shaft.

Q. 21. Is there in such practice, any connection with power tables?

A. I have seen a number of tables which would be equipped with a line shaft extending the length of the table, sometimes beneath the top of the table and other times on the top of the table, and this line shaft would be driven by a motor and by means of bands or belts, power would be transmitted from this line shaft to various small machines mounted on the table.

Q. 22. Please look at the drawing heretofore marked for identification 'Defendant's Exhibit No. 7,' and compare the structure contained therein with the shop practice, such as you have described, stating in what way, if any, the gearing shown therein differs from such shop practice?

A. In Defendant's Exhibit No. 7, there is a shaft 15^z which corresponds to the main line shaft of a manufacturing establishment. Mounted on this shaft 15^z there are two pulley wheels 15^y and 15^w. The pulley wheel 15^y is connected by means of a band to a pulley wheel 21^y mounted on a shaft 15, by means of which the washing mechanism of a washing machine is operated. The pulley 15^w is connected by means of a band to a pulley 20^x mounted on a shaft 15^x by means of which the mechanism of a wringer is operated. The gearing of this Defendant's Exhibit No. 7 corresponds very closely indeed to the operation of a line shaft in a factory, driving different machines. The line shaft corresponds to the shaft 15^z and one machine corresponding to the washing machine and the other corresponding to the wringer machine.

Of course, the machine of the exhibit differs from the machine of the factory in that the washing machine and the wringer shaft are brought close to the main drive shaft and the bands connecting the main

drive shafts to these other shafts are short instead of being long as in the case of a factory."

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Referring now to English Letters-Patent No. 1350 of 1889, granted to Wm. Shedlock, marked "Defendant's Exhibit No. 15, Shedlock Patent," and describing briefly the gearing disclosed in said patent—and also to Defendant's Exhibit No. 16:

Exhibit

This Shedlock patent is for improvements in washing machines and shows the gearing by which the washing mechanism of a washing machine is operated, and by which the wringer mechanism of a washing machine may also be operated. The washing is done in two drums, marked b, which are made to revolve by means of shafts c. The shafts of the drums are connected by means of gear wheels D to a reversing mechanism mounted between the two drums. It is not necessary, I think, for me to describe this reversing mechanism in detail as it is rather complicated, but this reversing mechanism is connected by means of suitable gearing devices to a power shaft C shown clearly in Figure 3. On the power shaft C there are mounted two pulleys, a tight pulley B and a loose pulley B'. A belt is supposed to be run from any suitable source of power to these pulleys. When the belt is passed over the fast pulley B the power shaft C is made to revolve, and through the medium of the gearing, motion is transmitted from this power shaft to the gear wheels D which are fastened to the shafts C and through the medium of the gearing D the shaft C is made to revolve and thus the drum which carries the clothing is made to revolve inside of the washing machine.

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Each of the shafts *c* is equipped with a clutch mechanism comprising the sleeve or hub *F* having teeth which engage with teeth formed on the hub of the gear wheel *D*. The clutch sleeve *F* is splined into the shaft *c* and the gear wheel *D* is loosely mounted on the shaft. When the clutch is out of gear as shown in the right-hand shaft of Figure 1, the shaft *c* will not be made to revolve, but if the clutch is in engagement as is shown in the left-hand shaft of Figure 1, then the shaft *c* will be made to revolve and the machine will operate to wash the clothes.

In this Shedlock machine, the clothes to be cleaned are put in a revolving drum and when the drum is revolved, the clothes are swirled through the water and thus cleaned: The reversing mechanism introduced between the gear wheels *D* and the power shaft *C* is for the purpose of automatically making the drum revolve a certain number of times, first in one direction and then to have this motion reversed and to be made to revolve a certain number of times in the opposite direction; in this way swirling the clothes back and forth through the water.

In Figure 2 of the drawings of the Shedlock patent, there is shown a wringer mechanism mounted on the frame of the machine, and which is indicated by the letter *F*. This wringer mechanism has a shaft *T*¹ shown in Figure 3 of the drawing and also an end view in Figure 2. At the outer end of this shaft *T*¹ there is a pulley *T*² which is adapted to be connected by means of a band to a small pulley *B*² which is shown as formed on the loose pulley *B*¹ of the drive shaft. The specification says, on page 4, lines 15 to 20:

“Motion is preferably imparted to the wringer *T* by means of a belt from an extension *B*² upon the

boss of the loose pulley B¹. By means of this arrangement, the said wringer T is not operated until the rotating receptacles b are stopped and the drive belt passed from the fast or driving pulley B onto the loose pulley B¹. This arrangement is advantageous as the wringer T is not usually required while the revolving receptacles b are in motion."

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That is to say, the drawings show the "preferred" arrangement of the pulley on the main drive shaft c by which the wringer is driven. It is evident of course that this pulley B² might be fastened on the fast pulley instead of on the loose pulley as shown in the drawings and as stated in the specification is the preferred arrangement.

Figure 2 shows a view of the gearing by which motion is transmitted from the wringer shaft T¹ to the wringer. The shaft T¹ has fastened upon it a pinion B which engages with two idle pinions U and U¹ which are mounted on the arm T. This arm T is adapted to move about the shaft T¹. The pinion U¹ engages with another pinion U² which is carried by an extension of the arm T. It is evident that when the shaft T¹ is made to revolve in a certain direction, the pinion U will revolve in one direction and the pinion U² will revolve in the opposite direction; so that if the arm T² be moved so that the pinion U engages with the gear wheel W formed on the shaft of one of the rolls of the wringer, the wringer will be made to operate in one direction. If the arm T² be moved down so as to disengage the pinion U from the gear W and the pinion U² be made to engage with the gear W, then the wringer will be operated in the opposite direction.

T⁴ is a quadrant for securing the arm or lever T² in position so that the pinion U or the pinion U² shall

drive the gear W. It is evident also that if the arm T² be moved so, from the position shown in Figure 2, that the pinion U must disengage before the pinion U² engages with the gear W; that is to say, there must be a position of the arm T² when the wringer will be at rest.

The drawing of Defendant's Exhibit No. 16 shows diagrammatically the various shafts, gearings and pulleys of the Shedlock patent, but the pulley B² of the Shedlock patent, which in the patent is shown as mounted on the loose pulley, is in the drawing of the exhibit shown as fastened to the main drive shaft.

The parts of this Exhibit No. 16 are marked with reference numerals used in the Phillips patent. The exhibit shows diagrammatically washer shafts 45 adapted to operate first in one direction, then in the other, as the shaft of the Phillips patent, and it shows in connection with this washing machine, a power operated wringer, driven from the same power shaft that drives the washing machine, and having introduced in the driving mechanism, reversing gear so the wringer may be driven in any desired direction (23).

"Q. 24. Referring to this Shedlock patent, please state whether or not you found disclosed in said patent the following structure:

'A gearing device for operating washing machines and wringers, comprising a support, a power shaft carried by the support, means for imparting a continuous rotary motion to the power shaft, a washing machine shaft mounted on the support, a driving device for the washing machine shaft, operatively connected with the power shaft and capable of imparting an alternating rotary motion to the washing machine shaft, a horizontal wringer shaft, a driving mechanism for said wringer shaft, connected with the power shaft and capable of imparting a rotary motion to the wringer shaft and a controlling means

applied to the driving device of the wringer shaft for reversing the movement thereof.' Deposition
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In answering this question, please assume that the wringer drive shaft 'T' is driven from the fixed instead of the loose pulley.

A. The element of the structure defined by the question, which is stated in the language 'a gearing device for operating a washing machine and wringer' is present in the Shedlock machine. The element 'a support' in the Shedlock machine is of course the frame carried by the legs A by which the mechanism is supported. The element 'a power shaft carried by the support' is the power shaft C of the Shedlock machine. The element 'means for imparting a continuous rotary motion to the power shaft' is the belt by which the engine or motor is connected to the pulley B fixed on the shaft C. The element 'a washing machine shaft mounted in the support' is the shafts c by which the drums of the machine are made to rotate. The element 'a driving device for the washing machine, operatively connected with the power shaft and capable of imparting an alternating rotary motion to the washing machine shaft' is the various gear wheels and the reversing mechanism by which and through which motion is communicated from the shaft C to the small shafts c. The element 'a horizontal wringer shaft' is the horizontal shaft of the wringer T on which the gear wheel Q is mounted. The element 'a drive mechanism for the said wringer shaft connected with the power shaft and capable of imparting a rotary motion to the wringer shaft' is the pulley B² which is supposed to be fast to the main shaft C; the belt by which this pulley is connected to the pulley T², the shaft T¹, the reversing gear carried by the arm T³ and the gear wheel W on the wringer shaft. The element 'a controlling means applied to the driving device for the wringer shaft for reversing the movement thereof' is the arm T³ with the pinions W, V, U¹, U² and the pinion U.

Q. 25. Without quoting Claim 5 of the Phillips patent in suit, will you please point out very briefly

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in what respects, if at all, the claim I have just read you and you have compared with the Shedlock patent, differs from Claim 5?

A. A comparison of the claim I have just discussed, with Claim 5 of the Phillips patent, shows that the claim of the question is for a gearing device for operating washing machines and wringers, while Claim 5 of the Phillips patent is stated to be 'a gearing device of the class described.'

In the claim under consideration, the power shaft is stated to be 'carried by the support,' while in Claim 5 the power shaft is stated to be 'mounted on the support.'

In the claim under consideration, the washing machine shaft or shaft which is instrumental in washing the clothes, is defined as 'a washing machine shaft mounted in the support,' while in Claim 5, the corresponding shaft is defined as 'an upright shaft 45 mounted in the support.'

In the claim under discussion, the wringer shaft is defined as 'a horizontal wringer shaft,' while in Claim 5 of the Phillips patent, the corresponding shaft is defined as 'a horizontal shaft 39.' The driving mechanism for the wringer shaft in the claim under consideration is defined as 'a driving mechanism for the said wringer shaft connected with the power shaft and capable of imparting a rotary motion to the wringer shaft,' while in Claim 5 of the Phillips patent, the corresponding element is defined as 'a driving mechanism for the said shaft 39 connected with the power shaft and capable of imparting a rotary motion to the shaft 39.'

The last element of the claim under consideration is defined as 'a controlling means applied to the driving device for the wringer shaft for reversing the movement thereof,' while the corresponding element in Claim 5 of the Phillips patent is defined as 'a controlling means applied to the driving device for the shaft 39 for reversing the movement thereof.' "

Referring to Letters-Patent No. 921,195, granted May 11, 1909, to O. B. Woodrow, marked for identification "Defendant's Exhibit No. 17, Woodrow Patent":

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This Woodrow patent is for a driving mechanism and shows a gearing device applied to a washing machine of the dolly type, which is equipped with a wringer. The gearing device is for the purpose of driving or operating the dolly of the machine and also for operating the wringer. The device is supposed to be operated by means of a motor, and in the drawings of the patent, 22 is the motor, which is mounted on a platform 21 carried by the legs 11, which support the tub 10. The motor is mounted beneath the tub. 23 is a pulley wheel mounted on the motor shaft and connected by means of a belt 27 to the pulley wheel 26, which is mounted on the shaft 25. When the motor is operated, the shaft 25 is made to revolve and it carries the device by which motion is communicated to the washing machine or to the wringer. On the shaft 25 there is loosely mounted a pinion 28, which has formed on one side of the hub a clutch member 29. Loosely mounted on the other end of the shaft 25 there is a pulley 31, which has formed on its hub a clutch member 33. 34 is a collar slidably mounted on the shaft 25 and provided with a slot 36 through which projects the screw 37. When the shaft 25 is made to revolve, this screw 37 presses the side of the slot 36 and makes the collar 34 revolve with the shaft. This collar is provided with an annularly grooved member 35, which engages with the forked end 41 of the lever 40, which is pivotally supported from the under side of the bottom of the tub. 43 is a lever fulcrumed on the bracket 44 and connected at its lower end to the lever 40 by means of the pitman 42. 45 is a lug formed on the lever 43 and adapted

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to enter notches 46 formed on the curved bracket 47 which is attached to the side of the tub. When the lever 43 is placed in position, shown in Figure 3 of the drawings, the clutch members 38 and 39 formed on the collar 34, are out of engagement with the clutch members 29, formed on the hub of the pinion 28 and also out of engagement with the clutch member 33 formed on the hub of the pulley 31; so that in this position the shaft 25 will revolve and the pinion 28 will be at rest and so too will the pulley 31; while the pinion 28 engages with the gear wheel 48, which has attached to it a pitman 17. This pitman 17 connects at its outer end to the lower end of a lever 15, which is fulcrumed on the bracket 14. At the upper end of the lever 15 there is pivotally attached a rock bar 16, which engages with the spur pinion 13 mounted on the dolly shaft 12. 38 is a band or belt by which the pulley 31 is connected to the pulley 20 mounted on the shaft of one of the rolls of the wringer 19. When the collar 34 is moved, so that the clutch members 38 engage with the clutch members 29, then the pin 28 will be made to revolve with the shaft 25 and it will drive the gear wheel 48 and through the medium of the pitman 17 and the lever 15 and the rock bar 16, motion will be communicated to the gear wheel 13 in such way as to drive the dolly shaft 12 first in one direction and then in the other. When the collar 34 is moved so that the clutch members 39 engage with the clutch members 30, the dolly shaft will be at rest and through the medium of the pulley 31 and the belt 38 and the wheel 20, the wringer will be made to operate.

This Woodrow patent shows a common drive shaft 25 with means by which this drive shaft may be given a motion of rotation continuously in one direction. It

shows an upright shaft mounted in the support, similar to the dolly shaft of the Phillips patent, and it shows means whereby an alternating motion of rotation may be communicated from the drive shaft to the upright dolly shaft, and it shows a wringer shaft and means whereby motion may be communicated from the drive shaft to the wringer shaft.

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This machine of the Woodrow patent differs from the machine of the Phillips patent and of Complainant's Exhibit No. 1, principally, in that there is no reverse mechanism by which the direction of the motion of the wringer may be changed and it is impossible to drive both the dolly shaft and the wringer shaft at the same time as it is in the Phillips patent. The driving mechanism for the dolly shaft of the Woodrow patent is very similar to the driving mechanism of the dolly shaft of the Phillips device; that is to say, in each there is a pinion at the upper end of the dolly shaft and this pinion is operated by means of a rock bar (26).

The machine of the Woodrow patent is substantially the same as the machine "Complainant's Exhibit, Automatic Electric Washer." There is a slight difference in the details of construction, such, for instance, as the motor being geared to a large gear wheel in the exhibit instead of being connected by means of a band to the large wheel as in the patent.

The machine of the exhibit also has a reversing mechanism in connection with the driving device for the wringer, and there is no reversing mechanism in the Woodrow patent. The machine of the exhibit also has means whereby this reversing mechanism may be operated to drive the wringer in either direction or to stop it (27).

Referring to the drawings of Defendant's Exhibit No. 1, Fisher Application:

Said drawings show a washing machine in which the washing is done by the rotating of a drum, first in one direction and then in the other, and it shows mounted on the washing machine a wringer, which is driven by the same motor that drives the washing machine apparatus. It is what is known as the drum machine and the clothes are put in the drum and the drum is made to revolve a certain number of revolutions, first in one direction and then in the opposite direction, the motion of the drum being automatically changed. The wringer and the drum are driven from the same power shaft and motion is given to this power shaft by means of a belt connected to a motor carried by the frame of the machine. The drum of the machine and the wringer may be operated at the same time and either may be thrown out of operation when desired. Either may be operated separately and distinct from the other. That is all, without entering into a long description of the machine (28).

Referring to Defendant's Exhibit 9:

The said machine is one having a horizontal shaft by means of which a drum is made to revolve through about half a revolution and then it is reversed and moved in the opposite direction, through about half a revolution. It is driven by a motor which is belted to a fly wheel and the fly wheel is geared by suitable gearing to the shaft of the drum.

This mechanism by which the drum is operated is provided with a clutch, so that when it is desired the drum may be thrown out of engagement and then when the power shaft is operated the drum will remain at rest.

Driven from the same power shaft by means of suitable gearing, there is a shaft which is connected by means of a sprocket chain to the shaft of the lower roll of a wringer, carried by the frame of the machine. The driving mechanism of the wringer is provided with a reversing gear, which is operated by means of a lever, so that the wringer may be made to revolve either in one or the other of two directions, and if the reversing gear is put in a neutral position, the wringer will be at rest, while the power shaft is being operated.

This machine shows a washing machine in which the washing can be done at the same time the wringing is done, and the washing can be done when the wringer is not in operation, or the wringing can be done when the washing is not being done; and it shows a wringer operating mechanism having a reversing gear and means by which the reversing gear may be put in a neutral position, so the wringer will remain at rest (29).

Considering claims 5 to 8 of the Phillips patent in suit:

In order that what I say may be comparable with what was stated by complainant's expert in discussing these claims, I will discuss claim 6 first.

I do not think it necessary for me to repeat the claim, but I will discuss the elements without first quoting the claim. The defendant's machine shows a gearing and it shows, as called for by the claim, "a gearing device of the class described"; that is to say, it shows a gearing adapted to be used in connection with washing machines for operating the washing mechanism and the wringing mechanism.

The defendant's machine comprises a support and means for imparting the continuous rotary motion to a

power shaft mounted on the support. The defendant's machine also has an upright dolly shaft and it has the means by which an alternating rotary motion is communicated to its upright dolly shaft from the power shaft.

In the claim, the element which is the upright shaft is defined as "an upright shaft 45 mounted in the support." By reason of the reference numeral 45 it is evident that the upright shaft referred to is the dolly shaft mounted in the middle of the support. The claim also calls for an element which is defined as "a horizontal shaft 39." A reference to the drawings of the patent shows that the horizontal shaft we refer to is a particular shaft; particular with respect to location and with respect to function. There are in addition to the power shaft in the patent, as I have already pointed out, four horizontal shafts which occupy different positions in the machine and different relations with respect to the power shaft. By this numeral 39, the element is defined specifically as one of the various horizontal shafts shown on the drawings of the Phillips patent and that one is the horizontal shaft which is arranged at right angles to the power shaft and out of the same plane as the power shaft, and which serves as the wringer shaft. Now in the defendant's machine, there is a wringer shaft which is a horizontal shaft, but it is arranged parallel to the power shaft and not at right angles.

"By the Court: Mr. Mehlhope, do you understand he is answering your question? We have had every word of this before.

Mr. Mehlhope: Not in reference to the claim."

So that, while the defendant's machine has a wringer shaft, it does not have the element of the claim which is a "horizontal shaft 39."

Also, while the wringer shaft of the defendant's machine is driven by mechanism, that mechanism is not of the kind or character which is defined in the claim as "a driving mechanism for the said shaft 39, connected with the power shaft and capable of imparting a rotary motion to the shaft 39."

The defendant's machine does have the controlling means whereby the wringer shaft may be reversed and whereby it may be operated to disconnect it from the driving shaft, but the defendant's machine lacks two elements called for in the structure, claim 6, and hence it is my opinion that the defendant's machine does not embody the structure of claim 6 of the patent in suit.

The other claims differ very slightly from claim 6, and each one of these other claims calls for the two elements which I have stated I do not find in the defendant's machine. For that reason it is my opinion that the defendant's machine does not embody the structures of claims 5, 6, 7 and 8 of the Phillips patent here in suit (30).

"By Mr. Mehlhope: I wish to offer in evidence all these exhibits referred to in Prof. Kinealy's examination, as identified. Exh

By the Court: They may all go in."

Direct examination closed.

Cross-Examination of Prof. Kinealy by Mr. Orwig.

The Madison patent does not contain all the elements of claim 6 of the Phillips patent in suit (31). Cro-
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The Kainer patent does not contain all the elements of the claims of the Phillips patent in suit (32).

The Brosi patent does not contain all the elements of the claims of the Phillips patent in suit (33).

The Willock patent does not contain all the elements of the claims of the Phillips patent in suit (34).

"X-Q. 35. I ask you the same question in regard to the publication, '507 Mechanical Movements.'

A. That does not contain all the elements of the claims of the Phillips patent in suit.

X-Q. 36. I ask you the same question in regard to the Shedlock patent?

A. If the claims of the Phillips patent in suit define a structure such as I have attempted to point out they do define, then the claims of the Phillips patent in suit define structures which are not found or embodied in the Shedlock patent, but if it be assumed that the claims define structures other than those which I have pointed out as in my opinion they do define, and which structures could only be arrived at by construing the claims broadly, then the Shedlock patent embodies the structures of those claims, thus construed.

X-Q. 37. As I understand your answer to be that the Shedlock British patent both does and does not embody the structures of the Phillips patent?

A. No.

X-Q. 38. Which is correct?

A. Putting it another way, if the claims of the Phillips patent are properly construed, then Shedlock device does not embody the structures of the claims, but if the claims of the Phillips patent are stretched and improperly construed, as for instance to include a machine such as the defendant's machine, then the structure of the Shedlock patent embodies the structure of the claims.

X-Q. 39. What elements in the claim of the Phillips patent in suit are not found in the Shedlock British patent, if any, assuming that the claims be construed in the light of the plain English language of the claim—not any forced or enlarged scope?

A. The Shedlock British patent does not show 'an upright shaft 45 mounted in the support,' although it does show a shaft by which washing is done and which shaft is mounted in the body of the wash-

ing machine. The Shedlock patent does not show 'a horizontal shaft 39,' although it does show a horizontal shaft, which is the shaft of a wringer, but this shaft is arranged parallel to the drive shaft and not at right angles to it, as is called for by the claims of the Philips patent.

If, now, the arrangement of the shaft 39 be entirely neglected and it be assumed that it is any kind of a horizontal shaft which serves as a wringer shaft, then the Shedlock patent shows that element. The claims of the Phillips patent call for 'a driving mechanism for the said shaft 39, connected with the power shaft and capable of imparting a rotary motion to the shaft 39,' and this driving mechanism is the mechanism which must be used when motion is communicated from one horizontal shaft to another horizontal shaft, where the second is in a different plane from the first and is at right angles to the first. The Shedlock machine does not show that, although if the position of the shaft 39 as called for by the claims of the patent in suit be neglected, then the Shedlock patent does show mechanism whereby motion is communicated from a drive shaft to a horizontal shaft of the wringer.

X-Q. 40. In the practical use of a machine like Complainant's Exhibit No. 1, or the defendant's machine here, is it frequently necessary and desirable to run both the washing machine and the wringer at the same time and how frequently in doing an ordinary washing would it be desirable to run the wringer while the washing machine was used?

By the Court: Are you asking him as an expert?

By Mr. Orwig: Yes, your Honor.

A. Of course, that will depend on the person operating the machine. It may be necessary at times to run the wringer when the washing machine is in operation, but ordinarily whenever the wringer is being used it is to wring the clothes either from the tub of the washing machine into some receptacle, or to wring the clothes from a receptacle into the tub of the machine, and in either case the cover of the machine will be raised and the dolly shaft will be

thrown out of operative connection with the driving mechanism. In that case, then, the wringer is operated and the washing machine is not.

X-Q. 41. Is it your idea, ordinarily, that in machines of the class referred to, the wringer is not operated during the time that the cover is closed?

A. Ordinarily it is not.

X-Q. 42. Please state whether or not you have either yourself performed the act of completing a washing on a machine of this character or have you ever watched any one else doing, for instance, a family washing?

A. I have never performed the act of doing a family washing on a machine of this character and I have never observed any one while that person was doing a complete family washing. I have, however, seen people run such a machine and have run the machine to wash, without wringing.

X-Q. 43. Where, then, do you get your statement that usually the cover is open when the wringer is running on a machine of this kind?

A. I do not think I made that statement; I said usually when they were wringing from the tub into a receptacle, or from a receptacle into the tub, the cover was open, and therefore the wringer was running and the washer was not running.

X-Q. 44. In the ordinary use of a machine, such as defendant's machine here, how much of the time in doing an ordinary washing would it be likely that the wringer would be running, and the cover of the machine closed, if you know?

A. I do not know; but I do not think the wringer would be running very much while the cover was closed, because the gearing mechanism on the cover would interfere with the setting of a receptacle on the machine, and if an attempt was made to lift the clothes from a receptacle sitting alongside of the machine and to put the clothing through the wringer, there would be danger, great danger, of the clothing coming in contact with the top of the machine and with the gearing, and the clothing would be soiled.

X-Q. 45. Do you understand that the gearing is all enclosed, when in use?

Depo-
Prof. J.
Kinealy

A. I should possibly have said the housing of the gearing; the clothing will come in contact with some part of the washing machine apparatus.

X-Q. 46. In connection with the use of defendant's machine in doing an ordinary washing, would you say that approximately one-half of the time would be saved on account of the fact that the washer and wringer may be run at the same time or as desired?

A. I could not make any statement as to the time that would be saved, for the simple reason that that will depend very largely upon the person.

X-Q. 47. Were you present and did you hear the testimony of the defendant's witness, Eustice, in the case of Grinnell Washing Machine Co. vs. Newton, in connection with this machine, Exhibit Newton Washing Machine, in which case the testimony of the defendant was to the effect that approximately one-half of the time in washing would be saved on account of this susceptibility of washing and wringing at the same time?

By Mr. Mehlhope: I object; this is an attempt to bring into this case the testimony of a witness not here to be cross-examined.

By the Court: You are not entitled to that, Mr. Orwig.

X-Q. 48. Do you know whether or not the defendants in this present case claim in their circulars that one of the desirable features of their machine is that the washing and wringing may be done either at the same time or independently?

By Mr. Mehlhope: I object.

By the Court: Objection overruled.

A. I do not know; I do not recall having read one of the circulars of the defendants.

In connection with the machine of the Shedlock British patent, there are two cylinders in which the clothes are washed."

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And both of these cylinders can be operated at the same time to do a washing operation on two different batches of clothes (49, 59).

There is one wringer.

The wringer of the Shedlock machine cannot be run when a washing is being done in either one of the two washing cylinders in the preferred form as shown in the drawings; but if the small pulley which is connected to the mechanism driving the wringer by means of a belt, should be made fast to the drive shaft, as I suggested, then you could do so (51, 52).

This suggestion however is hardly mine, because Shedlock pointed out a preferred form and he also shows a pulley which is fast on the main drive shaft, so that it would seem that if one desired to make a second pulley fast on the drive shaft, it could be done, although that would not be the preferred form of Shedlock (53).

"X-Q. 54. Is there any disclosure in the Shedlock patent which states that the pulleys could be arranged as you have just described them, whereby the washing and wringing operations could be done at the same time?

A. There is nothing further than what I have already pointed out, which is that the preferred form is that shown in which the pulley is loose on the shaft.

X-Q. 55. Is the device shown in the Shedlock British patent what you would call a domestic type of washing machine?

A. I think that it would be fair to say that the specific embodiment of the Shedlock invention shown in the drawings of the Shedlock patent is the washing machine such as would be used in a laundry, rather than in a house.

X-Q. 56. There is no upright dolly shaft in the Shedlock machine, is there?

A. No, sir; that shaft which corresponds to the dolly shaft in the Shedlock machine is horizontal." Depo
Prof.
Kine

This horizontal shaft to which I have referred in the Shedlock machine of Figure 4 in the patent, according to calculations, which I made some time ago, is so geared that each drum turns about three and three-quarters times before reversing, and the machine shown in Figure 2 turns about eleven times (57).

In the Shedlock machine, assuming that the washing is being done in one of the cylinders, in order to commence a wringing operation in the form of machine shown in the drawings, it would be necessary for the operator to shift the belt from the first pulley B to the loose pulley B' and then move the handle T³ to such a position that one of the gears of the reversing mechanism would engage with the gear wheel W (58). In the preferred form the action of starting the wringer necessarily stops the operation of both of the washing machine cylinders (59).

"X-Q. 60. Is there some other form than the preferred form as illustrated and described in this patent?

A. There is, as I have already stated two or three times; the form in which the belt wheel connecting the power shaft with the driving mechanism of the wringer would be a tight wheel.

X-Q. 61. That is not a form proposed by Shedlock, is it—that is proposed by yourself?

A. No, sir; that is a form indicated by Shedlock, though not spoken of in so many words. He illustrates what he calls the 'preferred form.'

X-Q. 62. But you cannot point out in the Shedlock specification, the form you have just described?

A. No, sir; he does not illustrate that point.

X-Q. 63. You have expressed it as your opinion that if claims 5 to 8 of the Phillips patent in suit

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be construed properly, they are not anticipated by the Shedlock patent; but if they are construed broadly enough to cover defendant's machine here in controversy, they are anticipated by Shedlock.

I have been unable to see any point in the reasons you have heretofore advanced for this opinion and I will ask you to restate as succinctly and clearly as you can, your reasons for this opinion, so that I can understand you?

A. I think I have already pointed out that the Shedlock patent illustrates a gearing device to be used with washing machines. It comprises a support; it comprises a power shaft mounted on the support—if the word 'on' be given a meaning the same as 'carried by.' The Shedlock device shows means for imparting a continuous rotary motion to the power shaft, being the belt from the motor and the fast pulley on the power shaft. The Shedlock device shows a shaft which is operated to wash the clothing, but this shaft is an upright shaft. It performs the same function and in the same way, except as to the degree of oscillation that the element of the claim covered by the language 'An upright shaft 45 mounted in the support.' The horizontal shaft connected to the drum of the Shedlock machine is the equivalent of the upright shaft 45 of the claims of the Phillips patent, if the claims be broadly construed. The Shedlock patent shows a driving device for this shaft of the drum and this driving device is operatively connected with the power shaft and is capable of having imparted to it alternating rotary motion. The Shedlock device shows a horizontal shaft which is a wringer shaft, but which is placed parallel to the power shaft, as is the wringer shaft of the defendant's machine, and not at right angles to the power shaft, as is called for by the claims of the Phillips patent in suit. If however, the position of the wringer shaft with respect to the drive shaft be ignored then the wringer shaft of the Shedlock patent is the equivalent or the same as the wringer shaft of the claims of the Phillips patent in suit.

The Shedlock machine shows a driving mechanism for the wringer shaft, connected with the power shaft and capable of imparting a rotary motion to the wringer shaft. The Shedlock machine also shows a controlling means applied to the driving device, for the wringer shaft, for reversing the movement thereof; that is to say, if the claims be read without the plain limitations imposed upon them, the Shedlock machine will disclose a structure which embodies the structure of claims 5, 6 and 7, and if it be assumed that a motor should be fastened to the frame of the Shedlock machine, then the Shedlock machine would embody the structure of claim 8 also. It is true that the Shedlock machine does not show a motor carried by the support, as is called for by claim 8.

X-Q. 64. I still fail to grasp your thought fully, but I understand you to say that one of the reasons that you have just been explaining is substantially like this: the defendant's machine here is not an infringement of claims 5 to 8, because you have to use some sort of a forced interpretation of the language of the claim in order to have this defendant's machine have the element of 'an upright shaft 45,' but if you do use this forced interpretation of this part of the claim, then you can in the same manner apply this part of the claim to the Shedlock patent; is that correct?

A. Not so much the upright shaft 45, as that with other parts of the claim. The principal element to which a forced construction must be given in order to make the structures of the claim be embodied in the defendant's machine, are those elements which have to do with the horizontal shaft 39. If a forced construction be placed upon these elements, and if these elements be construed as they should not be construed, then it is only right and proper that the element which refers to the upright shaft 45, should be construed in the same way as the element 39—that means, not giving to the language of the claim its plain simple meaning. The claims when construed properly would not be met by the Shedlock patent any more than they would be met by the

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defendant's apparatus, but if construed improperly, so as to be met by the defendant's machine, then they would be met by the Shedlock patent.

X-Q. 65. Am I to understand that it is your position in this matter, your opinion, that the defendant's machine does not have two essential elements of claims 5 to 8 of the Phillips patent, to wit, an upright shaft 45 and a horizontal shaft 39?

A. No, sir; the two elements which it is my opinion defendant's machine does not have are, first, the horizontal shaft 39 and the driving mechanism by which motion is communicated from the drive shaft to this horizontal wringer shaft 39, and that is because in the defendant's machine the wringer shaft is not placed with respect to the other parts so that it co-operates with the other parts, as does the shaft 39 of the claims.

X-Q. 66. Again, I understand that in defendant's machine, the element, to wit, 'means for operatively connecting the driving shaft to the wringer shaft 39,' is not present in the defendant's machine?

A. As I have already pointed out, in the defendant's machine, there is a driving device by which motion is communicated from the drive shaft to a wringer shaft, but this is not the driving device which forms a part of the combination of the claims of the Phillips patent, because in the combination of the Phillips patent the wringer mechanism is placed differently with respect to the other parts from what it is in the defendant's apparatus, and therefore it takes a different and special kind of apparatus to transmit the motion from the drive shaft to the wringer shaft. In the defendant's machine, the mechanism for transmitting the motion from the drive shaft to the wringer shaft is that which would be used in transmitting motion from one shaft to another, parallel to it; in the combination of claims, the device for transmission of motion must be that special kind of device used for transmitting motion from one shaft to another shaft at right angles to the first and in a different way.

X-Q. 67. Is it your opinion that this limitation of the claims of the Phillips patent, which you have just been describing, is implied in the claims, for instance claim 6, of the patent in suit, to limit them?

Depo-
Prof.
Kine

A. No, I think it is clearly brought out by the claim by the use of the numeral 39, just as the numeral 45 points to the dolly shaft.

X-Q. 68. Please now read into the record what language there is in, for instance, claim 6, of the Phillips patent, that leads you to say that the element of 'a driving mechanism for said shaft 39, connected with the power shaft and capable of imparting a rotary motion to the shaft 39,' is not present in defendant's machine.

A. I think you have already read into the record yourself the exact language, but I can repeat it if desired.

By the Court: I do not desire any re-quotation. We have had too much already. Refer to it if you can without repeating.

The driving mechanism is designated by the use of the numeral 39 in such a way as to show that the driving mechanism referred to is that which connects the drive shaft to a horizontal shaft, placed at right angles to the drive shaft, and which serves as a wringer shaft.

By the Court: Professor, do you make any point of the question that one patentee described his patent by numerals and the other not?

Prof. Kinealy: Yes.

By the Court: Well, you need not pursue that any further.

X-Q. 69. The usual test of whether a claim of a patent is anticipated by a prior art structure, if construed broadly enough to cover a later structure, is whether the later structure resembles that of the prior art structure more than it does the structure of the patent; is that correct?

A. No, I think the test is the interpretation put upon the language of the claim. If the language of the claim has to be stretched in order to meet the later patent, then that same stretched interpretation

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must be used in considering the patent with connection to the prior art.

X-Q. 70. Please state whether or not in your opinion the machine before you, defendant's machine, more nearly resembles the structure of the Phillips patent or does it more nearly resemble the structure of the Shedlock British patent?

A. In some respect it resembles one more than it does the other. For instance, the defendant's machine resembles the Phillips machine in that it is a dolly machine and it has the motor carried by the machine, but the defendant's machine resembles the Shedlock machine more than it does the Phillips machine in the location and arrangement of the wringer mechanism with respect to the other mechanism.

The defendant's machine does not resemble either of the machines so far as the specific means employed for giving the alternating rotary motion to the washing shaft or dolly shaft.

X-Q. 71. Just average up the whole matter; state without going into detail whether or not this defendant's machine resembles the Phillips patent more than it does the Shedlock machine?

By Mr. Mehlhope: I think that question has been answered as well as it can be.

Court: He may say for himself whether he has.

A. The general appearance of the tub and supporting device of defendant's machine is more like that of the Phillips machine than it is the Shedlock. Of course, I think any one looking at defendant's machine would recognize more similarity between its general appearance and that of the Phillips machine than they would between the defendant's machine and the Shedlock machine."

Cross-examination closed.

DEFENDANT RESTS.

"By Mr. Orwig: Your Honor, these same two expert witnesses were opposed in the prior case and

Prof. Kinealy considered exactly the same prior art, and I desire our expert witness to state his reasons why he does not agree with Prof. Kinealy in his idea of the prior art.

Depo-
Prof.
Kine-

The discussion in the other case applies fully to this one and if there is no objection, we can waive our expert testimony in rebuttal, if it will be stipulated and agreed that we will use Mr. Elroy's discussion of the prior art machines as admitted in evidence in the prior case.

Defendant's counsel objects to the introduction of the testimony above referred to, of the prior suit and court orders counsel to proceed with the rebuttal testimony."

XV. And, thereupon, John Howard McElroy was called as a witness in rebuttal on behalf of the complainant, who testified in words and figures as follows, to wit:

REBUTTAL.

Direct examination of JOHN HOWARD McELROY:

I have heard the testimony of Prof. Kinealy given in this case in connection with his consideration of the Shedlock British patent (1).

Prof. Kinealy has given it as his view or opinion that if the Claims 5 to 8 of the Phillips patent in suit be construed broadly enough to cover the defendant's machine herein complained of, that they are anticipated by the structure of the Shedlock British patent, but that if they are construed properly and narrowly enough not to cover defendant's machine herein complained of, they are not anticipated by the structure of the Shedlock British patent.

I have been entirely unable to follow his reasoning in the matter. In fact, I might say it seems to be absurd, because there can be no question but what defendant's machine herein complained of resembles the machine of the patent in suit in almost every essential particular and certainly responds fully to the terms of the claims, as I pointed out in my *prima facie* depositions in this case. Both machines are portable, domestic machines and have the motor mounted directly on the machine, whereas in the Shedlock patent, it is a large power machine, used in a laundry, set up in one position and remains there all the time. The Shedlock machine is used by skilled operators, who are operating the machine practically all the time, as in a commercial laundry the machines are in constant use. With these domestic portable machines, the purpose is decidedly different;

the conditions under which they are used are different. These machines are operated possibly a half day during the week; during the rest of the time they are stowed away somewhere out of the way. They must be small and compact and self-contained, and you might say, fool-proof. Now, with regard to all these features I have mentioned, the defendant's machine and the machine of the Phillips patent in suit are the same thing. Then, too, they are precisely the same type of machine; that is, a dolly type washing machine.

Prof. Kinealy undertook to give the impression that the mode of operation in the washing in these machines is the same as in the cylinder machines, but this is entirely unwarranted. He stated that the clothes were swirled in both machines, but the facts are in the dolly type machine, the clothes are swung back and forth over the bottom of the tub and are given a sort of rubbing action on the bottom and sides. In the cylinder machine, the clothes are put originally in the bottom of the cylinder and the cylinder is provided with ribs on its interior. Those ribs can be seen in Figure 6 of the Shedlock British patent, and they are numbered—I cannot see whether it is r^3 or whether it is y^3 . You see one of these ribs sticking up at the bottom of the machine in the vertical section and then you see two of them projecting from the side of the machine.

Now, the action of these ribs is to pick up the clothes as the cylinder rotates and carry them up as far as gravity will hold the clothes on the cylinder, after which the clothes drop from the height at the top of the cylinder and fall down into the water beneath. The action and

the method of washing is, I might say, radically different in the two types of machines.

"By Mr. Tefft: I would suggest that you direct your attention to what you see in the Shedlock patent itself, by comparison with the claim; right upon that point."

Owing to the interjected suggestion of counsel, I will take up the matter of the comparison of the claims of the Phillips patent in suit with the structure of the Shedlock patent. Take, for instance, Claim 6, which I considered in my prima facie deposition. While the Shedlock patent shows a gearing device, it is not a gearing device of the class or kind illustrated in the Phillips patent in suit, since it is designed to co-operate with a cylinder machine in which the cylinders are journaled on horizontal axes and are given several complete turns before they are reversed. The first element of the claim, "a support," considered broadly, might be said to be found in the Shedlock patent, inasmuch as the Shedlock patent shows a casing for a washing machine, of a different type, and the gearing is all mounted on that casing. If the claim intends that the support shall have a lid in which the dolly shaft is journaled, that element is not found in the Shedlock patent, because the lid a' of the Shedlock patent did not carry any of the gearing whatever.

The Shedlock patent might be said to have the second element, "a power shaft mounted on the support," in the horizontal power shaft C which carries the fast or tight pulley B and the loose pulley B'. The Shedlock patent has "means for imparting a continuous rotary motion to the power shaft," since it describes that a belt is used in connection with either the fast or the loose

pulley, so that the horizontal power shaft C can be driven continuously in one direction.

Dep.
John
McE

The Shedlock patent does not have the fourth element, "an upright shaft 45 mounted in the support," because there is in said Shedlock structure, no shaft that corresponds to this shaft and is upright. I have given it as my opinion, judging from the decision of Judge McPherson in the Iowa suits, that the claims are intended to be limited to a dolly type of washing machine, in which the shaft 45 is a vertical dolly shaft or an upright dolly shaft, journaled in the lid. The closest approach to the shaft 45 in this Shedlock patent are the horizontal shafts c, which extend through the sides of the casting and are secured at their inner ends to the cylinders of the machine. I do not consider that these horizontal shafts c are the upright shafts 45 of the patent in suit, because they are not upright, and for the further reason that they are rotated through a very much greater distance before reversal. In one form, the shafts c in the Shedlock structure are rotated through three and three-quarters complete turns before they are reversed and in the other form they are rotated through eleven complete turns before they are reversed. Now, the dolly shaft of the patent in suit, as I explained in my *prima facie* deposition, are rotated only through say two-thirds of a complete turn before they are reversed, and if you could put this gearing onto the domestic washing machine, it would rotate the dolly shaft through too many turns to be practical for a dolly type of washing machine.

I do not consider that this Shedlock patent has the fifth element, "a driving device for the upright shaft operatively connected with the power shaft and capable

of imparting an alternating rotary motion to the upright shaft" because, as I said before, the gearing in the Shedlock patent between the power shaft C and the horizontal shaft c is of such a character as to rotate the shaft c through three and three-quarters or eleven complete turns, before the reversal takes place.

I think that the Shedlock machine has the sixth element, "a horizontal shaft 39," because it has the horizontal wringer shaft and herein I disagree with Prof. Kinealy, who seems to think that this is not the horizontal shaft contemplated by the patent in suit. I cannot see how he gets that idea in his head.

I do not believe that the Shedlock machine has the seventh element, "a driving mechanism for the said shaft 39 connected with the power shaft and capable of imparting a rotary motion to the shaft 39," because the power shaft, as stated by Prof. Kinealy in his application of the claims to this Shedlock structure, is the shaft C and there is no driving connection shown or described in the Shedlock patent between this shaft C and the wringer roll shaft. There is the loose pulley B' having the small pulley wheel B² loosely mounted on the shaft C and this loose pulley acts through a belt to drive the horizontal wringer roll, but the power shaft C does not drive the wringer roll and when you start the wringer roll you stop the horizontal shaft and vice versa when you start the horizontal shaft you necessarily stop the wringer shaft.

Prof. Kinealy says that the construction shown in the patent is merely the preferred form; but there is no other form shown or suggested, and his assumption that the small pulley B² could be fastened to the fast pulley

B instead of the loose pulley, is not following the teachings of the Shedlock patent but it is following the teachings of the Phillips patent. I see no reason whatever for his assumption that that is the preferred form because it is the only form shown.

Finally, with regard to the last element, "a controlling means applied to the driving device for the shaft 39 for reversing the movement thereof," that much of the element is found in the Shedlock machine because you can shift the hand lever T³ from the position shown in Figure 2 in which the wringer rolls rotate in one direction to the other position in which they will rotate in the opposite direction; but I do not think that the Shedlock machine contains the final limitation that the controlling means shall be "for operatively disconnecting the shaft 39 from the driving shaft." My reason for thinking this is as follows: If you will refer to Figure 2 of the drawings of the Shedlock British patent, you will see a segment T⁴, with which the controlling lever T³ co-operates and this segment T⁴ shows two circles on it which are evidently recessed to co-operate with some sort of spring catch mechanism, carried by the controlling lever T³ so that the controlling lever may be locked in either one of two positions, i. e., with the pinion U engaging the gear wheel W so as to rotate the wringer rolls in one direction, or with the pinion U² engaging the gear wheel W to be rotated in the opposite direction. While it is true that if you move the lever to an intermediate position, it would have both rollers stopped, there is nothing to hold the hand lever in that intermediate position and it would probably fall into one or the other position; it would probably fall into the position shown in Figure 2, because the parts—well, it is hard to tell which way it would, depending on how they are placed, but Shedlock

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does not depend on the position of the lever T³ to stop the wringer rolls. He depends on the shifting of the driving belt from the loose pulley to the fast pulley to stop the wringer rolls and consequently I do not think that this Shedlock patent can possibly be said to show the controlling means that are "for operatively disconnecting the shaft 39 from the driving shaft."

For such elements of claim 6 as are found in claims 5 and 7, all I have said in regard to claim 6 would apply to claims 5 and 7. The same is true with reference to claim 8, and claim 8 has a further limitation in that it calls for "a prime mover carried by the support for imparting a continuous rotary motion to the power shaft." This of course means that the motor is mounted on the washing machine so that as the washing machine is moved around from one part of the room or house to the other, the motor goes with it, and of course that is not true of the Shedlock device, where it is a stationary machine and the power is applied by some engine that is not shown in the drawings and is obviously not mounted on the laundry machine.

I might give one more reason for thinking that the Shedlock machine does not contain the invention of the patent in suit, and that is this: if the gearing between the power shaft and the cylinders of the Shedlock machine were of such a character that it could be taken off and put into a dolly type of machine to run the dolly type of machine, there might be some ground for the suggestion that all Phillips did was to take the gearing of the Shedlock machine and put it on the ordinary dolly type machine; but you cannot make that substitution. The gear wheels G of the Shedlock machine are so large that if you put them on the top of the dolly type machine,

they would extend out and interfere with the roller and that would be true even if you left the gearings just as they are. If you made them large enough so that you could cut down the amount of reciprocation given to the dolly shaft to say three-quarters of a turn before it reverses, instead of three and three-quarters turns given in the Shedlock structure, the large gear wheels that would be on the top of the tub, would extend out several feet on all sides of the tub and you could not possibly get at the tub or put the wringer rolls in place on the tub.

Of course, I realize that it is possible to redesign and reconstruct this gearing to bring it into the compass of a dolly type of washing machine, but in my opinion when you do this, you are following the teachings of the Phillips patent in suit and not the teachings of the Shedlock patent (2). I have studied and understand each and every one of the prior art patents or devices that have been referred to by Prof. Kinealy in his testimony (3). No one of them contains the complete combination of elements defined by claims 5 to 8 inclusive, of the Phillips patent in suit and capable of performing substantially the same work (4).

I expressed the opinion in my *prima facie* deposition, that claims 5 to 8 of the patent in suit cover the defendant's machine by making the statement that defendant's machine contains each and every element recited in claims 5 to 8 inclusive of the Phillips patent in suit, in the same or fully equivalent form, combined and co-operating in the same or a fully equivalent manner, for the same purposes and producing precisely the same results. There is nothing whatever developed by the disclosures of the prior art here that would lead me to change my opinion in this respect, in the slightest (5).

Direct examination closed.

"Cross-Examination by Mr. Mehlhope.

X-Q. 6. Mr. McElroy, in pointing out the difference in the claims in issue and the Shedlock patent, you have described the difference between the two washing machines—the washing machine of Shedlock and the washing machine of Phillips. Has the difference in types of washing machines anything to do with the way the wringers operate in both Shedlock and Phillips?

A. It has something to do with the question of the location of the wringers relative to the other parts. In the dolly type of washing machine, the wringer has a very definite location relative to the dolly type of machine, and with the laundry machine—the cylinder machine—well where you have a big machine like Shedlock's, it is hard to say where it might be located. In the development of the barrel or cylinder machines in recent years, where they have been made so small, I presume that the wringers must be located on the side of the machine; I do not see where else they could be put in the small cylinder machines."

By the "side" of the machine I mean at the side of the tub of the machine (7).

The location of the wringer rolls in Shedlock is in the center of the complete machine and it is above the washing machine, as it is in the case of the Phillips patent (8).

I do not know whether you could say there is any tub in the Shedlock machine, in the sense that tub is ordinarily employed, but if you consider the casing of the machine and take half of it with the cylinder in that half, then the relationship of the wringer rolls and the cylinder would not be dissimilar from that of the wringer rolls to the tub of the Phillips machine (9).

"X-Q. 10. In view of your distinction between a 'casing' as shown in the Shedlock patent, and a 'tub'

as shown in the Phillips patent, would you say this is a casing or a tub, in Defendant's Exhibit 9?

Depositor
John H.
McElroy

A. Well, I don't know what the trade calls the bodies of those machines. I would not think of them as being a tub, because to my mind a tub is a shallow, circular type, like half a barrel. I am not prepared to say whether they call the bodies of those cylinder machines in the trade, tubs or not, but I do not think they do.

X-Q. 11. No matter what they call them, the function is the same in the casing here and the tub of the Phillips patent; that is, it holds the water?

A. Broadly speaking, that is true.

X-Q. 12. I have been attempting to get exactly what limitations you are reading into claims 5 to 8, and as I understand you, you expressed in interpreting claim 5, the claim in this language:

'A gearing device comprising a supporting element, the upper portion of which is movable relative to the body thereof, a power shaft mounted on said supporting element, means for imparting a continuous rotary motion to the power shaft, an upright shaft journaled in the movable portion of said supporting element, a driving device on the upright shaft, operatively connected with the power shaft and capable of imparting alternating rotary motion to the upright shaft through an angle of two-thirds of a complete revolution, a horizontal shaft carried by the stationary part of the supporting element, a drive mechanism for the horizontal shaft connected with the power shaft and capable of imparting continuous rotary motion to the horizontal shaft in either direction and a controlling means applied to the horizontal shaft for reversing the direction of the movement thereof at will.'

Please state whether I have correctly stated what you believe to be the terms in which claim 5 should be read?

A. Unless my recollection is at fault, you are trying to do now what you refused to do a while ago: use the testimony I gave in the other case. I do not recall that I interpreted the claim in that particu-

lar language; my recollection is in the other case I pointed out the Patent Office would not allow the solicitor of the patent to claim the gearing for the dolly type of washing machine, and you asked me then to formulate a claim that I thought the examiner would allow and that would be substantially coterminous with the claims of the patent in suit as I construed them, and my recollection is that I formulated a claim or structure about as you have quoted it. If the claim was given that limitation quoted it would be, I think, possibly even more limited than the claims as they really are, but the matter of the employment of the dolly type of washing machine would not be specifically mentioned in the claims.

By Mr. Mehlohope: I think you have misconstrued my question, which was not as to what you testified to in the other case. I have stated a claim to you which expressed what I understood you to say claim 5 means in this case. I am asking you if I have properly expressed your position.

As I understood your question, the structure set out in the question would probably be substantially coterminous with the structure, defined by claim 5 of the Phillips patent in suit, as I understand it was construed so by Judge McPherson.

X-Q. 13. You were present this morning when I presented a claim to Prof. Kinealy, defendant's expert, drawn after claim 5 but with some of the language in claim 5, as expressed in the patent, changed. I asked Prof. Kinealy whether the subject matter of this claim was to be found in Shedlock, if we supposed that the wringer shaft in Shedlock was driven from the fixed pulley on the drive shaft, instead of from the loose pulley. His answer was yes. Without re-reading the claim to you, I will ask you to state if you agree with Prof. Kinealy in this answer?

A. I desire to call special attention, before answering the question, to the fact that I disagree with Prof. Kinealy's notion that the Shedlock patent in any way, shape, manner or form, suggests that the wringer pulley might be fast on the power shaft; but if it was fast on the power shaft and if we dis-

regard the kind of a washing machine and make it include every possible kind of a washing machine, the statement quoted might very well apply to the Shedlock structure.

Depos.
John
McElr.

X-Q. 14. Supposing that the wringer is driven from the fixed pulley in Shedlock, is there anything in the construction that would prevent the wringer operating in a proper manner and substantially as it would in the Phillips patent?

A. Not if the engine was powerful enough to carry the load of both the cylinders and the wringer at the same time.

X-Q. 15. You have pointed out the fact that the controlling device for the wringer in the Shedlock patent has only means provided for holding the controlling arm in locked position with either the one or the other reverse gear. That is the time that a lock is required in a reverse mechanism, is it not, and the only time?

A. Well, there is a structure shown in the Shedlock patent, I would say, that is the only time it is needed there because Shedlock stops his wringer by stopping the driving mechanism for it. He stops the wringer and starts the washing mechanism. The condition in Shedlock is different from what it is in the Phillips structure; if the wringer shaft was run continuously in the Shedlock structure and the controlling mechanism therein shown was employed, I think it would be substantially impossible to stop the wringer; that is to say, you might stop it but as soon as you took your hand off of the controlling lever, it would probably fall into position to run the wringer either in one direction or the other.

X-Q. 16. As a mechanic yourself, don't you know it to be a fact that in the case of a reverse gearing as shown in the Phillips patent, or in any one of the machines here, or of the kind shown in the Shedlock patent, it is impossible for the arm to assume an operative connection with the driving gear except when it is locked in that place and it will stand naturally in the idle, intermediate position?

A. I will answer your question by saying that if the gearing is not locked in operative position, the

tendency is to throw it out of operative position, but it is likely to be thrown from one extreme to another and it might be chattering back and forth between the two sets of gears. It is always advisable to lock it in the intermediate position, and you will find all these machines have means for locking it in the intermediate position. In the machine of the Phillips patent in suit, you have the rack or segment 35 with the three notches, one for each of the three positions; in defendant's machine, you have the spring press plunger 35 which co-operates with the handle 34 to hold it in one of the three positions; in the Automatic Electric Washer and Wringer, you have a quadrant over which the handle moves and this quadrant has three notches in it so that the handle will be held in either one of the three positions; in the Newton Washing Machine you have a hand lever with a pin on it, moved back and forth over a bar having three holes in it and the pin is thrown by the spring of the handle, into one of the three holes to hold it locked in one of the three positions.

X-Q. 17. This was quite a familiar mechanical expedient in the use of gearing, was it not?

A. Yes.

X-Q. 18. Phillips discovered nothing in this connection, did he?

A. No, there is no one element in the Phillips structure that is novel *per se*. All the claims were drawn to combinations and the presumption is of course being drawn to combinations that no element *per se* is novel.

X-Q. 19. You have referred to the Shedlock machine as a large laundry machine and not one adapted for domestic purposes. You were present when Mr. Alva J. Fisher's deposition was read, were you not?

A. I was present; I cannot say that I remember very much about what he said.

X-Q. 20. You are familiar with the Thor machine, are you not, invented by Mr. Fisher?

A. I have seen the Thor machine.

X-Q. 21. That machine is an example of the domestic use of a machine of the Shedlock type, is it not?

A. I do not recall how many complete rotations are given to the Thor cylinder before it is reversed and I never examined the internal mechanism of the machine. So far as both are of the cylinder type, I will say that it is an exemplification of the cylinder type of machine and that the Shedlock machine is a cylinder type of machine, but apparently of a very much larger kind than the Thor machine.

X-Q. 22. Do you see yourself, any mechanical difficulty in the way of reducing the Shedlock machine to domestic size, in case it should be held the Shedlock patent did disclose a large laundry machine only?

A. I see no reason why the same design might not be employed and all the elements reduced proportionately.

X-Q. 23. Now as to the number of turns of the cylinder in a cylinder type of machine, I refer you to this Defendant's Exhibit 9, and ask you to examine it and state if it is not a fact that the cylinder here makes only half a revolution before it reverses.

A. Assuming you were operating the machine properly, I find that it doesn't make quite half a complete turn; I should think it was around 135 to 140 degrees.

X-Q. 24. Referring now to the concept of applying a power driven reversible wringer to a washing machine, the wringer and the washing machine being both driven from the same motor; I will ask you to state if this is not fully disclosed by Shedlock?

A. The broad concept, irrespective as to any limitation of the character of the washing machines and the possibility of the washing machine and the wringer being run simultaneously, could probably be said to be found in Shedlock.

X-Q. 25. Stepping aside for a moment: in view of your talk of running the wringer and washing machine simultaneously, I will ask you to refer to Complainant's Exhibit, Automatic Electric Washer and Wringer, and state whether the washing machine and wringer can be run simultaneously?

A. The machine is broken and I cannot tell without operating the machine itself, what the action would be.

Complainant's counsel here admits that in the machine referred to, the wringer and washing machine cannot be run at the same time.

X-Q. 26. From Mr. Orwig's admission in regard to this machine, it is clear that the Complainant's Exhibit, Automatic Electric Washer and Wringer, is identical in this respect with the Shedlock patent, is it not?

A. Understanding that this statement applies only to the matter of simultaneously operating the wringer and washing machine mechanisms, and recalling that the washing machine mechanisms are radically different, and if Mr. Orwig is correct, the answer would be affirmative.

X-Q. 27. That is one of the distinctions you made, however, in holding that the claims of the Phillips patent were novel?

A. I do not know that I did that; I pointed it out as one of the differences.

X-Q. 28. You testified in the former case, against Woodrow *et al.*, in which the Automatic Washer and Wringer Machine was held by you to respond to the claims of the patent in suit; did you not?

A. I did.

X-Q. 29. Now returning to the concept of applying a reversible wringer to a washing machine and driving both the washing machine and the wringer machine from the same motor; you have admitted that this was disclosed in Shedlock, in so far as he showed its application to a cylinder type of washing machine. Now, given this broad concept, would there be any very great jump of the imagination for one to conceive the idea of doing the same thing in connection with a dolly washing machine?

A. It would require some imagination, but of course, nothing like so much as if there had been no previous combination of any type of washing machine with a wringer.

X-Q. 30. Presume the concept then, of applying such a power driven wringer mechanism combined with power driven washing mechanism on a dolly type washing machine, and presume the issuance of the Phillips patent and the manufacture of his machine; will you kindly point out to the court what aid or assistance defendants had in constructing their entirely different type of washing machine and wringer mechanism; what, beyond the concept, was furnished to this defendant?

Depos-
John
McElr

A. I do not understand the question or else it is incorrectly stated. The two washing machines are precisely the same thing. The difference resides purely in the train of gearings by which the dolly shaft is reciprocated and the wringer rolls operated. However, I should say that the defendants would undoubtedly have had considerable assistance in the matter of proportioning the relative speeds of the dolly shaft and the wringer rolls.

X-Q. 31. Did you not point out the other day that as a matter of fact, the reducing gear in Phillips is not to be found in the defendant's machine and that the defendants had in fact worked the matter out in an entirely different way?

A. I pointed out that defendant's machine had the full equivalent of the specific reducing gearing shown in the patent in suit. The reducing gearing in the two machines is specifically different, although it is the same generic reducing gear.

X-Q. 32. There is nothing in any of the claims about the speed or the relative speeds?

A. The claims do not mention any relative speed, but the specification and drawings illustrate the dolly type of machine and furnish an adequate disclosure of a gearing that might be employed and if this gearing was actually built it would easily teach the relative speeds.

X-Q. 33. You stated a while ago, that whereas the Shedlock patent was a large clumsy, laundry machine, the machine of the patent in suit was a small, domestic type of machine, which was 'fool-proof.' Is there anything in the complainant's machine that is 'fool-proof' that taught the defendants

how to make their machine fool-proof, by the Phillips patent?

A. So far as the present controversy is concerned, the only thing adopted by the defendants that was taught by Phillips with reference to making the invention more fool-proof, was the provision of mechanism by which the wringer rolls could be reversed instantaneously, if the fool managed to get her fingers between the rolls.

X-Q. 34. And Phillips taught the defendant that?

A. In a machine of this type.

X-Q. 35. The reverse gearing in the defendant's machine is entirely different from the reverse gearing in the Phillips machine is it not?

A. The specific reverse mechanism itself is different.

X-Q. 36. Will you point out on this defendant's machine, just what he did, in following the Phillips patent, outside of the broad concept of applying to a dolly washing machine, a power driven reversible wringer. Has he followed Phillips in any respect beyond that?

A. Without stopping to figure out the details of all the gearing, I have very little doubt but what you will find the relative speeds of the dolly shaft and the wringer rolls in defendant's machine are substantially the same as the relative speeds in the machine of the patent in suit.

X-Q. 37. Are you willing to state that as a fact? Have you made any experiment to determine that as a fact?

A. I have not made any experiment to determine it; we could run the machine and find out.

X-Q. 38. Did you not say the other day that a washing machine mechanic would know at what speed to run the wringer rolls?

A. Possibly he might not know what relative speeds to give them, though—

X-Q. 39. Did you not say the mere fact that it was a dolly shaft, indicated that it had to be rotated backwards and forwards through an amplitude of

rotation of one-half to three-quarters of a revolution.

A. I think I made such a statement.

X-Q. 40. Is there any word in the Phillips patent which in the least mentions the relative speeds at which the wringer rolls should be run as compared with the speed at which the dolly shaft should be oscillated?

A. Probably not. The matter would be determined by building a machine in accordance with the disclosures of the patent.

X-Q. 41. While the prior patents, with the exception of the Shedlock patent, did not disclose reverse mechanism, the patents we have referred to do disclose the fact that the washing machine mechanism of the defendant as well as that of the Phillips patent, were old, long prior to the Phillips patent; do they not?

A. It shows that the dolly type of washing machine was prior to the Phillips patent.

X-Q. 42. And it shows a prime mover to operate the dolly mechanism, which might be operated by a motor?

A. Yes, the Woodrow patent, I believe, shows that.

X-Q. 43. In fact, the Woodrow patent shows everything in the Phillips patent, except a reverse mechanism on the wringer shaft, does it not?

A. In a specifically different form. I may, however, state that it contains all the limitations of the claims in controversy, except the reverse mechanism for the wringer shaft and the controlling means for it.

X-Q. 44. In fact, this Automatic Electric Washer and Wringer, offered by complainants as an exhibit, involved in the suit against Woodrow *et al.*, is a reproduction of the Woodrow patent, with the exception of the reverse gearing on the wringer shaft; is that not correct?

A. The addition of the reverse gearing for the wringer rolls and the controlling means for this reversible wringer is the only essential differences

between this exhibit machine and that shown in the Woodrow patent.

X-Q. 45. And this exhibit here, without the reverse mechanism, that is the Automatic Electric Washer Machine, was made by defendants in that case before Phillips made up his reversing wringer mechanism?

A. I could not say as to that. My recollection is that the Woodrow patent was invented prior to Phillips.

X-Q. 46. Referring to the Willock patent and particularly to Figure 2, that patent discloses substantially the mechanism or the equivalent of the mechanism in the Phillips patent, including between the drive shaft 15, the wringer shaft 39; with the exception that the operating arm is an automatic arm instead of a hand-operated arm; is that correct?

A. If you will include the fact that the machine of the Phillips patent in suit has specific speed reducing gears, which is not present in this Willock structure, I will answer affirmatively.

X-Q. 47. Asking the same question with reference to defendant's machine, what is your answer?

A. The reversing mechanism of the defendant's machine while including maybe the same elements, have them arranged in a somewhat different combination, but however, designed to effect the same ultimate result.

X-Q. 48. Now, referring to Woodrow, I intended to ask you a question—by simply adding the movement 53 of the '507 Mechanical Movements' illustrated on the drawing marked Defendant's Exhibit 14, we would have a gearing which would be like the Phillips patent, as claimed in Claims 5 to 8, would we not?

A. Assuming that mechanical movement 53 had been properly designed for reversing a washing machine gearing, and combined with the structure shown in the Woodrow patent, and also provided with a proper controlling means, that would be correct.

X-Q. 49. Will you please state for the benefit of the court, what particular difficulty there would be in applying the reverse gearing of the mechanical movement you have been referring to, to a wringer shaft, any more than to apply it to the washing machine shaft itself, or to any other machine shaft?

A. There would be no great difficulty for an expert inventor."

Cross-examination closed.

Examination closed.

By Mr. Orwig: I wish to file the amendment to the bill of complaint at this time.

By Col. Brown: I would like to have introduced 'Defendant's Exhibit No. 8, Catalogue of the White Co.'

The Court: They may be filed.

Mr. Orwig introduces patent in suit at suggestion of Col. Brown."

COMPLAINANT RESTS.

XVI. And thereupon a recess was taken to Monday, the 22nd day of June, 1914, and afterwards, to wit: on the 22nd day of June, 1914, the court listened to oral arguments by Ralph Orwig, Esq., and Wm. V. Tefft, Esq., on behalf of the complainant, and by Taylor E. Brown, Esq., and Clarence E. Mehlhope, Esq., on behalf of the defendant; and permitted counsel to file briefs. And, thereupon, briefs were filed by the parties as follows:

Complainant's brief, July 6, 1914;

Defendant's brief, July 20, 1914;

Complainant's reply brief, July 28, 1914.

XVII. Afterwards, to wit: on the 22nd day of March, 1915, Hon. J. Otis Humphrey filed a memorandum opinion, in words and figures as follows, to wit:

OPINION.

Two questions are involved:

1st. Does the Phillips machine show patentable novelty?

2nd. Is defendant's machine an infringement of the Phillips patent?

Much litigation over this patent has preceded this case. The same questions were involved and the same counsel appeared. In argument here, both sides expressed confidence in the coming decision of the Court of Appeals of the Eighth Circuit in the case of Newton Washing Machine Company *vs.* Grinnell Washing Machine Company to sustain their respective contentions. The decision in the Newton case was handed down February 17, 1915, holding that:

"the Phillips patent is a combination of old elements producing a new and useful result, or an old result in a more facile, economical and efficient manner that it is not shown to have been anticipated, and it is therefore patentable."

The court also held the Newton patent to be an infringement on the Phillips patent.

The finding of the Court of Appeals of the Eighth Circuit in the Newton case accords entirely with the impressions I received on the trial of the case at bar. The defendant, however, introduced additional evidence of prior use by one Fisher. I have considered carefully all that the record shows on this subject and find it unsatisfactory.

I am therefore of opinion that the Phillips device <sup>Opinal
Mar.</sup> shows patentable novelty, and that the defendant's device is an infringement thereof. Counsel for complainant may submit form of decree.

J. OTIS HUMPHREY,
United States District Judge.

(Original filed March 22, 1915.)

XVIII. And afterwards, to wit, on the 26th day of March, 1915, a decree was entered, in words and figures as follows, to wit:

DECREE.

This cause coming on for trial on June 18, 1914, upon <sup>Decree
Mar.</sup> pleadings, proofs and exhibits, and after oral argument on June 22, 1914, by Ralph Orwig, Esq., and W. V. Tefft, Esq., on behalf of the complainant, and Taylor E. Brown, Esq., and Clarence E. Mehlhope, Esq., on behalf of the defendant; and the court having considered the said pleadings, proofs, exhibits and printed briefs filed on behalf of the defendant as well as on behalf of the complainant, and the court being duly advised in the premises, it is hereby ordered, adjudged and decreed:

1. That the complainant, the Grinnell Washing Machine Company, is the sole and exclusive owner of letters-patent of the United States, No. 950,402, issued to William F. Phillips, granted and dated February 22, 1910, for improvements in gearing devices, and the invention shown, secured and claimed therein in claims 5, 6, 7 and 8, thereof; that said letters-patent as to said claims 5, 6, 7 and 8 are good and valid in law and that the complainant is entitled to recover, as well the profits realized, as the damages sustained in and by reason

of any unlawful or unauthorized use of said invention and letters-patent and to enjoin and restrain the unlawful use thereof.

II. That the defendant, E. E. Johnson Company, a corporation organized and existing under the laws of the State of Illinois, has infringed upon claims 5, 6, 7 and 8 of said Letters-Patent No. 950,402 and the exclusive rights of the complainant thereunder, by selling and using washing machines containing the gearing devices set forth and claimed in said claims 5, 6, 7 and 8; and that the complainant is entitled to recover from the said defendant the damages which the complainant has sustained, as well as the profits, gains and advantages which the defendant has derived in and by said infringement, together with the costs of this case to be taxed.

III. That the defendant, E. E. Johnson Company, its officers, managers, servants, agents, trustees, attorneys, workmen and representatives and each and every one of them be and they are hereby enjoined and restrained from the remainder of the terms of said Letters-Patent No. 950,402, or until the further order of this court, from directly or indirectly making or causing to be made, vending or causing to be sold, using or causing to be used, or giving away, any washing machine or other apparatus or machine made or constructed in accordance with or containing and embodying the said invention in gearing set forth and described in claims 5, 6, 7 and 8 of the said Phillips Letters-Patent No. 950,402 of February 22, 1910, or from in any other manner infringing complainant's said letters-patent and invention.

IV. That the complainant, the Grinnell Washing Machine Company, recover from the defendant, E. E. Johnson Company, the profits, savings and advantages made

and realized by the said defendant in the sale and use of said infringing machines, and also recover from said defendant the damages sustained by the complainant in and by reason of said infringement, as well as the costs of this case to be taxed; and for this purpose it is further especially ordered that this cause be and is hereby referred to.....Esq., special master of this court, to take, state and report the account of such damages, savings, profits and advantages under and in accordance with this order and decree.

Decree
Mar. 2

Done and ordered of record at Springfield, Illinois, this 26th day of March, A. D. 1915.

J. OTIS HUMPHREY,
U. S. District Judge.

No objection is made to the form of this decree.
TAYLOR E. BROWN,
Solicitor for Defendant.

XIX. And afterwards, to wit, on the 5th day of April, 1915, petition for appeal was filed, in words and figures as follows, to wit:

PETITION FOR APPEAL.

To the Honorable Judges of the District Court of the United States in and for the Southern District of Illinois, Northern Division:

The above named defendant, the E. E. Johnson Company, a corporation of the State of Illinois, located and doing business in the City of Peoria, County of Peoria, in the said state, considering itself aggrieved by the order and decree made in the above entitled cause on

Petition
Appeal
5, 191

the 26th day of March, 1915, establishing the validity of complainant's letters-patent to W. F. Phillips, No. 950,402, issued February 22, 1910, for "Gearing Device"; holding that the defendant had infringed claims 5, 6, 7 and 8 thereof, and that the complainant is entitled to collect the damages sustained by it and also the profits received by the defendant by reason of said infringement; directing that an injunction issue against the defendant to restrain said infringement and referring the cause to a master for an accounting, all at defendant's costs, does hereby appeal from said order and decree to the United States Circuit Court of Appeals for the Seventh Circuit, for the reasons specified in the assignment of errors which is filed herewith.

And the said defendant, the E. E. Johnson Company, further prays that this appeal may be allowed; that a citation be granted, directed to the above named complainant, demanding it to be and appear before the United States Circuit Court of Appeals for the Seventh District to do and receive what may appertain to justice to be done in the premises; and that a transcript of the record, proceedings and papers upon which said order and decree was made may be duly authenticated and sent to the United States Circuit Court of Appeals for the Seventh Judicial Circuit.

E. E. JOHNSON COMPANY,

By TAYLOR E. BROWN,

Its Attorney in Fact.

TAYLOR E. BROWN and
CLARENCE E. MEHLHOPE,

Solicitors and of Counsel.

XX. And afterwards, to wit, on the 5th day of April, 1915, an assignment of errors was filed, in words and figures as follows, to wit:

ASSIGNMENT OF ERRORS.

And now comes the above named defendant, by Taylor E. Brown, Esq., and Clarence E. Mehlhope, Esq., its solicitors, and says that the order and decree entered herein on the 26th day of March, 1915, sustaining the complainant's Letters-Patent No. 950,402, issued to W. F. Phillips on the 22nd day of February, 1910, for "Gearing Device" as good and valid in law; holding the said defendant to have infringed upon claims 5, 6, 7 and 8 of said letters-patent; directing the issuance of an injunction against said defendant and referring the cause to a master for an accounting for damages and profits, by reason of the sale and use by the defendant of washing machines similar to the exhibit entitled "Complainant's Exhibit No. 9, Defendant's Machine," is erroneous and against the just rights of the defendant; and that the District Court of the United States for the Northern Division of the Southern District of Illinois erred in entering said order and decree for the following reasons:

I. That the court erred in entering a decree holding the patent valid and infringed and in directing the issuance of an injunction and an accounting, at defendant's costs.

II. That the court erred in not entering a decree holding the patent invalid and void:

- (a) because of aggregation,
- (b) because of anticipation, and
- (c) because of non-patentable subject matter.

III. That the court erred in not entering a decree finding the said claims 5, 6, 7 and 8 so limited in scope that said Phillips patent, if valid, is not infringed by defendant's machine.

IV. That the court erred in not dismissing the bill of complaint at complainant's costs.

Wherefore, the E. E. Johnson Company, the defendant in this cause, prays that the order and decree of the said District Court of the United States for the Northern Division of the Southern District of Illinois, be reversed and that the said District Court of the United States, Northern Division, Southern District of Illinois, be directed and ordered to enter a final order or decree dismissing the bill of complaint herein at the complainant's costs and to grant such other and further relief to this defendant as may seem just and proper.

TAYLOR E. BROWN,

CLARENCE E. MEHLHOPE,

Solicitors and of Counsel for Defendant.

XXI. And afterwards, to wit, on the 5th day of April, 1915, cost bond on appeal was filed, in words and figures as follows, to wit:

COST BOND ON APPEAL.

Know all men by these presents: That we, E. E. Johnson Company, of Peoria, Illinois, as principal, and Illinois Surety Company, as surety, are held and jointly bound unto the Grinnell Washing Machine Company of Grinnell, Iowa, in the full and just sum of two hundred and fifty (\$250) dollars, to be paid to the said Grinnell Washing Machine Company, its successors or assigns, to

which payment well and truly to be made, we find ourselves, our heirs, executors and administrators, jointly and severally by these presents, sealed with our seals and dated this 2nd day of April, 1915.

Cost Bd
on App
Apr. 2.

Whereas, at a hearing in the District Court of the United States for the Northern Division of the Southern District of Illinois, in a suit pending in said court between the said Grinnell Washing Machine Company, complainant, and the said E. E. Johnson Company, defendant, an order and decree was entered on the 26th day of March, 1915, against the said defendant, E. E. Johnson Company, holding the complainant's Letters-Patent No. 950,402 to W. F. Phillips, to be valid and infringed and granting other relief to the said complainant, the Grinnell Washing Machine Company; and

Whereas, the said E. E. Johnson Company, defendant, has filed a petition for an appeal in the office of the clerk of said court to reverse the decree in the aforesaid suit, and has obtained an order of the court granting said appeal, and a citation directed to the said Grinnell Washing Machine Company, commanding it to be and appear at a session of the United States Circuit Court of Appeals for the Seventh Circuit, to be held at the City of Chicago within thirty (30) days from the date hereof.

Now, the condition of the above obligation is such that if the said E. E. Johnson Company shall prosecute its said appeal to effect and answer all damages and costs if it failed to make its said appeal good, then the above

Order Allowing Appeal.

obligation to be void; otherwise to be and remain in full force and virtue.

E. E. JOHNSON COMPANY,
By E. E. JOHNSON,

Attest:

President.

.....,

Acting Secretary.

ILLINOIS SURETY COMPANY,
By JAMES S. HOPKINS,

Attest:

President.

CHAS. E. SCHICK,
Secretary.

Approved April 5, 1915.

HUMPHREY,

Judge.

XXII. And afterwards, to wit: on the 5th day of April, 1915, an order allowing appeal was entered, in words and figures as follows, to wit:

ORDER ALLOWING APPEAL.

The above named defendant, having filed its assignment of errors and petition for appeal and upon motion of Taylor E. Brown, Esq., and Clarence E. Mehlehope, Esq., solicitors for defendant, for an order allowing said appeal, and the court being duly advised, it is hereby ordered:

I. That said motion is granted and said appeal be and the same is hereby allowed to the United States Circuit Court of Appeals for the Seventh Judicial Circuit from the order and decree entered herein on the 26th day of March, 1915, upon the filing of an appeal bond in the sum of two hundred and fifty (\$250) dollars with sureties to be approved by the court.

II. That the accounting before the master be and it is hereby stayed and suspended during the pendency of and until the determination of said appeal and until the further order of the court.

Order
Allow
Appeal
April

Dated: Springfield, Illinois, April 5, 1915.

J. OTIS HUMPHREY,
U. S. District Judge.

XXIII. And afterwards, to wit: on the 4th day of May, 1915, the defendant lodged the foregoing statement of evidence with the clerk of this court and proof of due notice to solicitors for complainant-appellee.

XXIV. And afterwards, to wit: on the 24th day of June, 1915, an order was made in words and figures as follows, to wit:

The within and foregoing statement of evidence, prepared by counsel for defendant-appellant and lodged with the clerk on the 4th day of May, 1915, with due notice to the solicitors for complainant-appellee, is true, complete and properly prepared and therefore approved by the court, this 24th day of June, 1915.

Order
24, 1915

HUMPHREY,
U. S. District Judge.

The foregoing abstract and statement of evidence has been examined by me and is hereby approved, by and on behalf of complainant-appellee.

RALPH ORWIG,
*Solicitor and of Counsel for
Complainant-Appellee.*

Endorsed: The foregoing statement of evidence lodged in my office this 4th day of May, A. D. 1915.

R. C. BROWN,
Clerk.

XXV. Certificate of clerk on transcript of evidence.

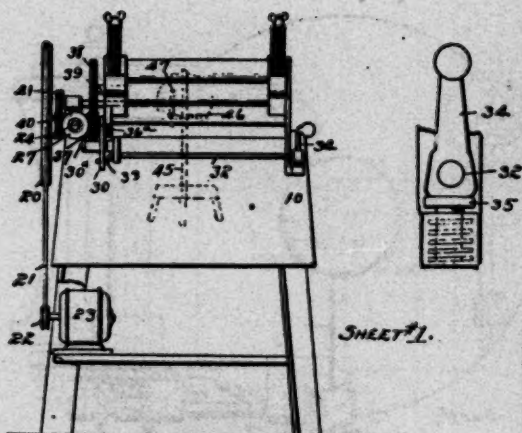
United States of America,
Southern District of Illinois, } ss.
Northern Division.

I, R. C. Brown, clerk of the District Court of the United States for the Southern District of Illinois, do hereby certify the foregoing to be a true and correct copy of "Defendant's statement of evidence" filed in said court on Thursday, the 24th day of June, A. D. 1915, in a certain cause wherein GRINNELL WASHING MACHINE Co. is complainant and E. E. JOHNSON COMPANY is defendant, as the same appears from the original remaining in my custody.

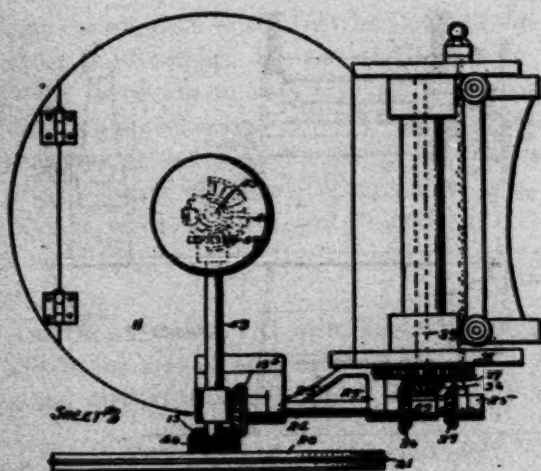
IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seal of said court at Peoria, in said division and district, this 3rd day of July, A. D. 1915.

R. C. BROWN,
Clerk.

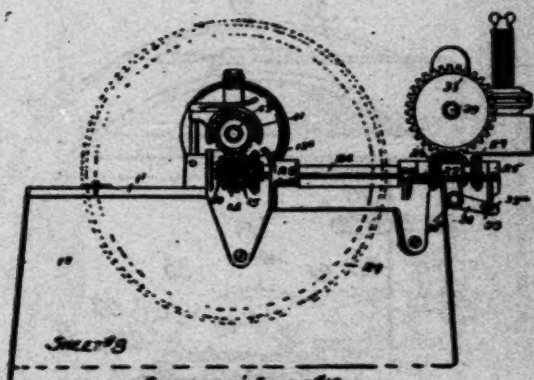
By J. T. B. JONES,
Deputy.



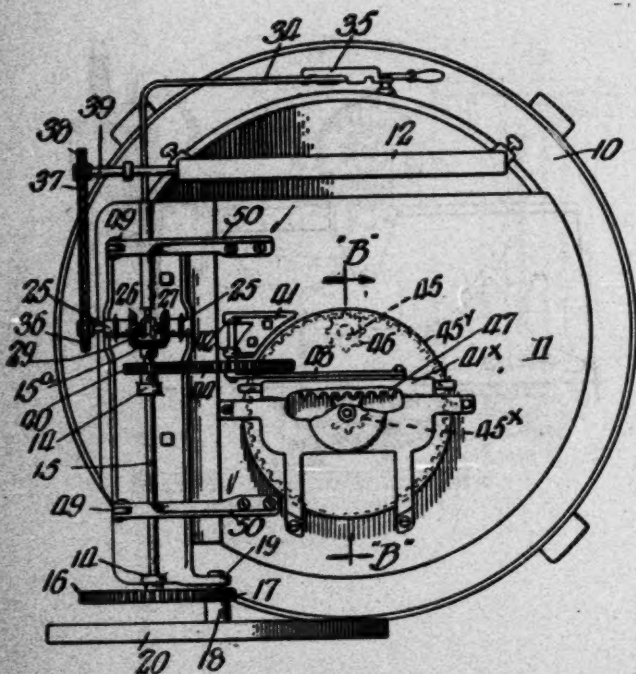
COMPLAINANT'S EXHIBIT #15
M'ELROY'S DRAWING OF
DEFENDANT'S MACHINE



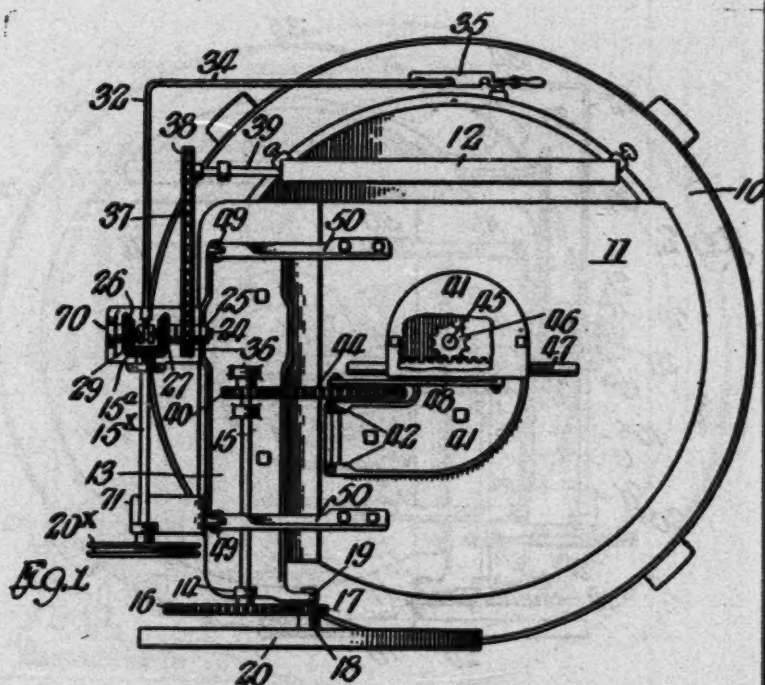
COMPLAINANT'S EXHIBIT NO. 15
N^O. 1895'S DRAWING OF
DEFENDANT'S MACHINE



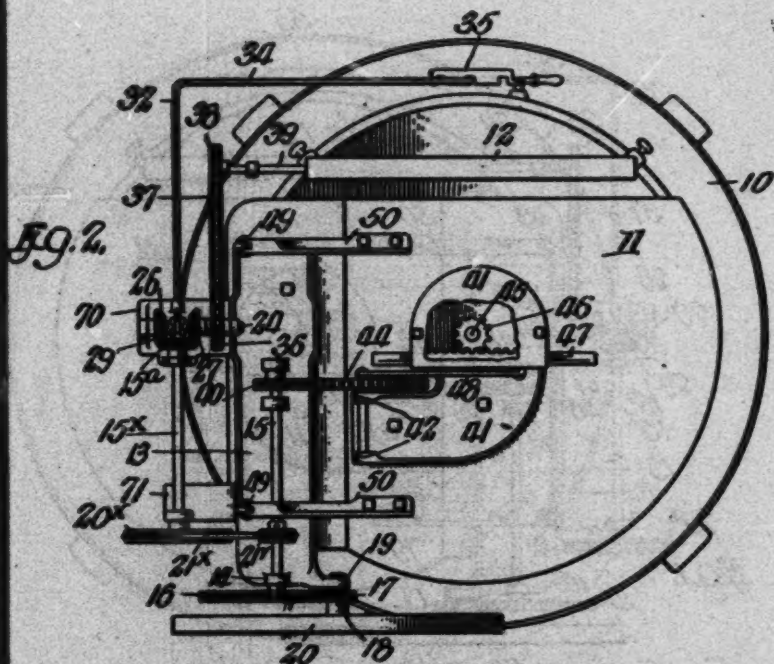
COMPLAINANT'S EXHIBIT NO. 15
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DEFENDANT'S MACHINE



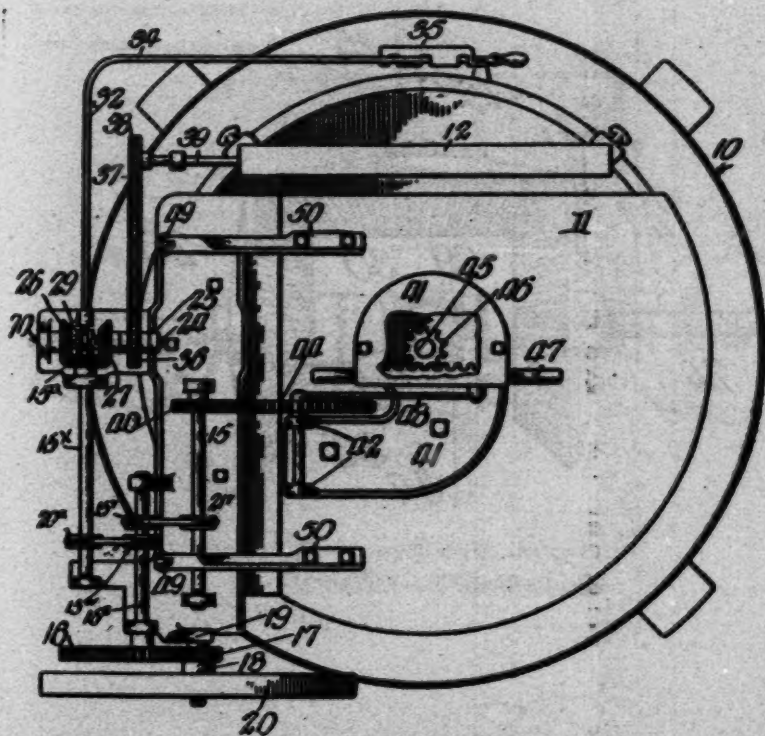
DEFENDANT'S EXHIBIT No. 4.
DRAWING, PHILLIP'S WITH 5 REVS.



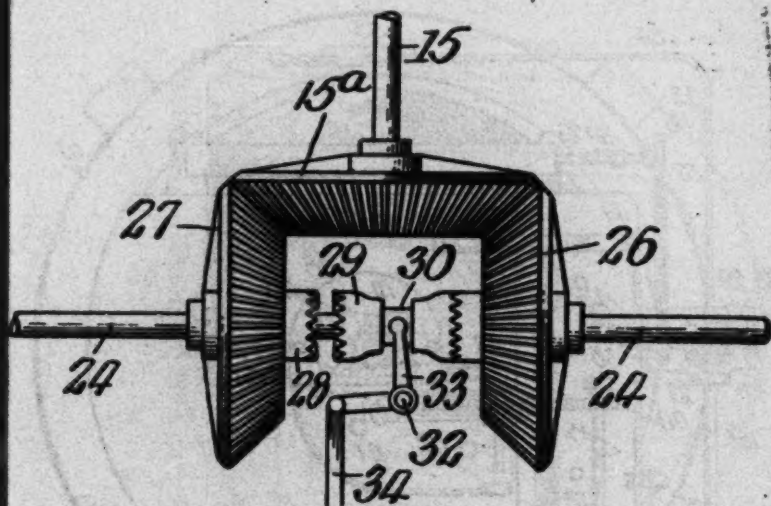
DEFENDANT'S EXHIBIT No. 5.
DRAWING, AGGREGATION SKETCH.



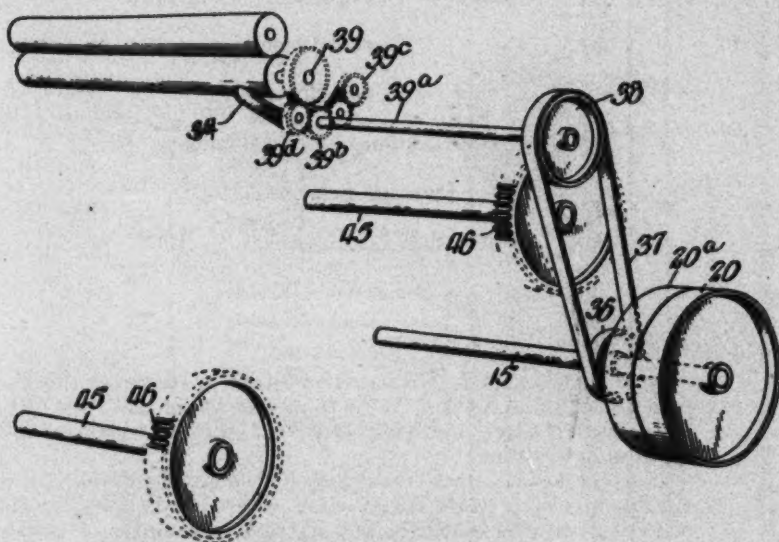
DEFENDANT'S EXHIBIT NO. 6.
DRAWING, AGGREGATION SKETCH CONNECTED.



DEFENDANT'S EXHIBIT No. 7.
DRAWING, LINE SHAFT, PHILLIPS.



DEFENDANT'S EXHIBIT No. 14.
MECHANICAL MOVEMENT No. 53.



DEFENDANT'S EXHIBIT No. 16.
SHEDLOCK SKETCH.

United States Patent Office.

William F. Phillips, of Newton, Iowa.

Gearing Device.

950,402.

Specification of Letters Patent.

Patented Feb. 22, 1910.

Application Filed January 15, 1909.

Serial No. 472,451.

To all whom it may concern:

Be it known that I, William F. Phillips, a citizen of the United States, residing at Newton, in the county of Jasper and State of Iowa, have invented a new and useful Gearing Device, of which the following is a specification.

The object of my invention is to provide a gearing device of simple, durable and inexpensive construction, especially designed for use in operating washing machines and wringers, by means of power applied by an electric motor or other source of power.

A further object is to provide a device of this kind in which all of the operative parts are arranged in compact form, and may be quickly and easily applied to any of the ordinary machines of the class described.

A further object is to provide a device of this kind in which the shaft for operating the washing machine will be automatically thrown out of gear when the hinged cover of the machine is raised, and will be automatically thrown into gear when the hinged cover is lowered to its closed position, and further to provide simple, durable and inexpensive means for throwing the wringer operating mechanism out of gear, or for reversing its movement.

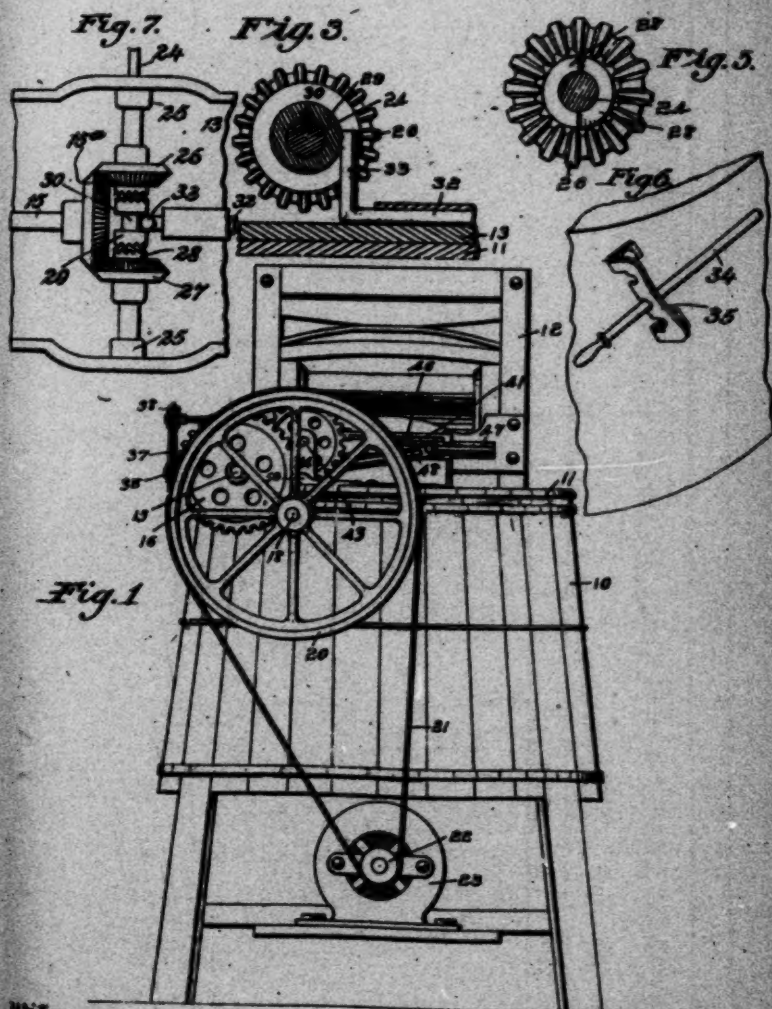
My invention consists in the construction, arrangement and combination of the various parts of the device, whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claims and illustrated in the accompanying drawings, in which—

(Here follow drawings marked pages 228-231.)

Patented Feb. 22, 1910.

SHEET-SHEET 1.

950,402.

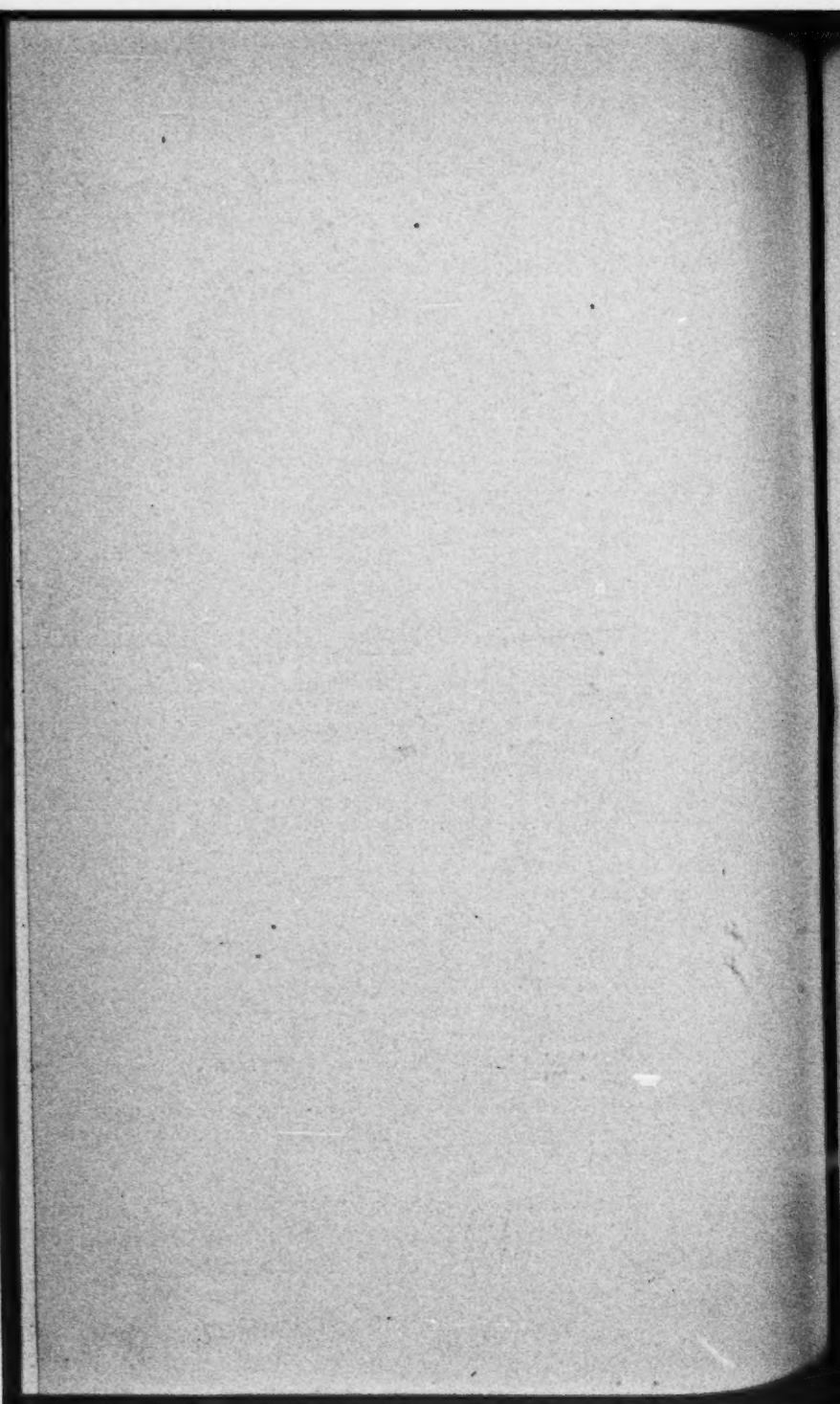


Witnesses

C. G. Dahlberg
A. S. Wagne

Inventor

William F. Phillips
by Oring Land

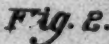
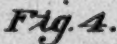


GEARING DEVICE.

Patented Feb. 22, 1910.

~~SECRET-SECRET~~

950,402.



Amesbury.

Ed. Dahlberg.

Hubbard

Inventor:

William F Phillips

by Christ the Lord says

Figure 1 shows a side elevation of a gearing device embodying my invention and applied to a washing machine and wringer. Fig. 2 shows a top or plan view of same. Fig. 3 shows an enlarged detail sectional view illustrating the means for operating the ratchet clutch of the device. Fig. 4 shows a detail view illustrating the power shaft, the gear wheels for driving the washing machine, and the gearing device for operating the wringer. The dotted lines in said figure show the position of the gear wheel for operating the washing machine, in mesh with the gear wheel on the power shaft, and the solid lines show said gear wheel in the position it would assume when the cover is elevated, and Fig. 5 shows a detail view of one of the beveled gear wheels, to illustrate the ratchet face thereon. Fig. 6 shows a detail view illustrating the rack for supporting the gear wheel adjusting lever, and Fig. 7 shows a top or plan view of the gearing device for operating the wringer.

Referring to the accompanying drawings, I have used the reference numeral 10 to indicate the body portion of the washing machine on which a cover 11 is mounted. A wringer 12 is placed on the body portion. In this connection, it is to be understood that neither the washing machine nor the wringer constitutes any part of my present invention, and are illustrated and described herein only for the purpose of showing a practical application of my improved gearing device.

My improved gearing device is in the nature of an attachment that may be readily and quickly applied to any of the ordinary forms of machines of the class herein shown and described. The major portion of the gearing device is connected with and supported by a base 13, which may be bolted to the body portion of a washing machine, and which is provided with bearings 14 to receive the power shaft 15 which is rotatably mounted therein.

On one end of the power shaft 15 is a gear wheel 16 which is in mesh with a smaller gear wheel 17 which is rotatably mounted on a short shaft 18, supported by a bracket 19 on the base 13. A balance wheel 20 is also fixed to the shaft 18, and I have provided for operating the power shaft 15 by placing the belt 21 on the balance wheel 20, and connecting the said belt with a pulley 22 operated by a motor 23, which motor may be located beneath the body of the machine and on the other end of the power shaft is a beveled pinion 15^a.

Mounted on the base 13 is a shaft 24, rotatably supported in the bearings 25 and having rotatably mounted thereon two beveled pinions 26 and 27 spaced apart from each other, and provided with ratchet clutch members 28 on their adjacent faces. Between the beveled pinions 26 and 27 is a hub 29 slidingly and non-rotatably mounted on the shaft 24 and provided with an annular groove 30, and also having on its outer faces ratchet clutch members 31 designed to co-act with the ratchet clutch member 28.

For operating the sliding clutch member 29, I have provided a shaft 32 mounted in the base 13, and having an upwardly extended arm 33 arranged in the groove 30. On the outer end of the shaft 32 is a crank arm 34, and a notched rack 35 of

the ordinary construction is provided to receive the arm 34, and support it in any position in which it may be placed. When said arm 34 is at its center, the hub 29 is between the pinions 26 and 27, and hence neither of them will be operated, and when the arm 34 is moved in one direction away from the center, the clutch device will engage the beveled pinion 26, and thus rotate the shaft 24 in one direction, and when the arm 30 is moved in the opposite direction from the center, the shaft 24 will be rotated in an opposite direction. Both of said beveled pinions 26 and 27 are normally in mesh with the beveled pinion 15^a.

On the end of the shaft 24 is a sprocket wheel 36 connected by a sprocket chain 37 with a sprocket wheel 38 on the shaft 39 of a wringer. Fixed to the shaft 15 is a small gear wheel 40 for operating the washing machine.

The device for imparting motion from the power shaft 15 to the washing machine comprises a base 41 designed to be bolted to the hinged portion 11 of a washing machine. This base is provided with bearings 42 to receive a shaft 43, which shaft is provided with a gear wheel 44 normally in mesh with the gear wheel 40.

The shaft of the washing machine is indicated by the numeral 45, and is provided with a pinion 46. This pinion is in mesh with a rack bar 47, slidably mounted in the base 41, and connected by means of a pitman 48 with the gear wheel 44, so that when the gear wheel 44 is continuously rotated in one direction, an alternating rotary motion will be imparted to the shaft 45.

The power shaft 15 is located at about the longitudinal central portion of the base 13. Near the outer edge of the base 13 are two upright hinge members 49 and pivoted to them are the hinge members 50, which latter extend over the power shaft and are bolted to the cover 11. By this arrangement, it is obvious that when the cover is raised, the gear wheel 44 will move upwardly and away from the gear wheel 40, as clearly illustrated in Fig. 4, so that the gear wheel 44 is automatically thrown out of engagement with the gear wheel 40 when the cover is raised.

In practical operation, power is applied to the balance wheel 21, and during the process of washing and wringing clothes, it is not necessary to stop the motor that is operating the balance wheel. During the time that the hinged member is in its closed position, the shaft 45 will receive an alternating rotary motion. Any time that the operator desires to inspect the interior of the washing machine, he need only raise the cover, whereupon the washing machine is automatically thrown out of gear, and as soon as the cover is lowered, the washing machine is again thrown into gear. This is all done automatically, and without any attention on the part of the operator. When the cover of the washing machine is raised, the operator may have access to the contents of the washing machine, and these may then be placed between the rollers of the wringer, and the movement of the wringer may be readily and easily controlled by a manipulation of the crank arm 34 of the shaft 32.

One of the desirable and advantageous features of my invention is

that all of the operative parts are closely assembled on a base connected with the machine body, and a second base connected with the hinged cover, and hence, all of the parts are firmly supported and are not liable to get out of order, or to lose their accurate adjustment with relation to each other.

I claim as my invention:

1. An improved gearing device, comprising a stationary support, a supporting member hinged to the stationary support, a power shaft on the stationary support, a gear wheel thereon, a gear wheel rotatably mounted on the hinged supporting member, hinges for connecting the hinged portion with the body portion, said hinges having their pivotal points so arranged with relation to the power shaft that when the hinged supporting member is raised, the said gear wheel on it will be moved upwardly and rearwardly out of engagement with the gear wheel on the power shaft, an upright shaft connected with the hinged supporting member, a pinion thereon, a rack slidingly supported in mesh with said pinion, and a pitman connected with the gear wheel on the hinged supporting member and also with said rack.

2. An improved gearing device, comprising a stationary support, a base fixed thereto, a power shaft mounted on said base, a shaft arranged transversely of the power shaft and mounted on said base, hinge members mounted on the base, a short shaft rotatably mounted on the base, means for gearing the short shaft to the power shaft, a balance wheel on the short shaft, a small gear wheel on the power shaft, a supporting member hinged to the stationary support, hinge members fixed thereto and extended over the power shaft and connected with the hinge members on said base, a base plate fixed to the hinged supporting member, a shaft mounted on said base plate, a gear wheel on said shaft capable of meshing with the gear wheel on the power shaft, an upright shaft mounted in the hinged supporting member, means actuated by the gear wheel on the hinged supporting member for imparting an alternating rotary motion to
234 & 235 the upright shaft by a continuous rotary motion of said gear wheel, and means interposed between the power shaft and the transverse shaft on the first mentioned base for throwing the transverse shaft out of gear or for rotating it in either direction.

3. In a device of the class described, the combination of a stationary support, a supporting member hinged to the stationary support, a power shaft rotatably mounted on the stationary support, a gear wheel connected with it, an upright shaft mounted in the hinged supporting member, a gear wheel mounted on the hinged supporting member, a gear wheel on the power shaft in mesh with the gear wheel on the hinged supporting member, and hinge members connecting the stationary support with the hinged supporting member and extended from the hinged supporting member over the shaft on the stationary support and attached to the stationary support so that

when the hinged supporting member is elevated, the gear wheels will move to position out of mesh with each other, and means whereby the gear wheel on the hinged supporting member, when continuously rotated, will impart an alternating rotary motion to the vertical shaft in the hinged supporting member.

4. In a gearing device of the class described, the combination of a support, a power shaft mounted thereon, an upright shaft, means interposed between the power shaft and the upright shaft for imparting an alternating, rotary motion to the latter by a continuous rotary motion of the former, a shaft arranged transversely of the power shaft, and gearing devices interposed between said transverse shaft and the power shaft for imparting a continuous rotary motion in either direction to the transverse shaft, and for throwing said transverse shaft out of gear with the power shaft.

5. A gearing device of the class described, comprising a support, a power shaft mounted on the support, means for imparting a continuous rotary motion to the power shaft, an upright shaft 45 mounted in the support, a driving device for the upright shaft operatively connected with the power shaft and capable of imparting an alternating rotary motion to the upright shaft, a horizontal shaft 39, a driving mechanism for the said shaft 39 connected with the power shaft and capable of imparting a rotary motion to the shaft 39, and a controlling means applied to the driving device for the shaft 39, for reversing the movement thereof.

6. A gearing device of the class described, comprising a support, a power shaft mounted on the support, means for imparting a continuous rotary motion to the power shaft, an upright shaft 45 mounted in the support, a driving device for the upright shaft operatively connected with the power shaft and capable of imparting an alternating rotary motion to the upright shaft, a horizontal shaft 39, a driving mechanism for the said shaft 39 connected with the power shaft and capable of imparting a rotary motion to the shaft 39, and a controlling means applied to the driving device for the shaft 39, for reversing the movement thereof and also for operatively disconnecting the shaft 39 from the driving shaft.

7. A gearing device of the class described comprising a support, power shaft mounted on the support, means for imparting a continuous rotary motion to the power shaft, an upright shaft 45 mounted in the support, a driving device for the upright shaft operatively connected with the power shaft and capable of imparting an alternating rotary motion to the upright shaft, a horizontal shaft 39, a driving mechanism for the said shaft 39 connected with the power shaft and capable of imparting a rotary motion to the shaft 39, a controlling means applied to the driving device for the shaft 39, for reversing the movement thereof, and a hand lever for adjusting said controlling means.

8. A gearing device of the class described, comprising a support,

a power shaft mounted on the support, a prime mover carried by the support for imparting a continuous rotary motion to the power shaft, an upright shaft 45 mounted on the support, a driving device for the upright shaft operatively connected with the power shaft and capable of imparting an alternating rotary motion to the upright shaft, a horizontal shaft 39, a driving mechanism for the said shaft 39 connected with the power shaft and capable of imparting a rotary motion to the shaft 39, and a controlling means applied to the driving device for the shaft 39, for reversing the movement thereof.

Des Moines, Iowa, December 9, 1908.

WILLIAM F. PHILLIPS.

Witnesses:

M. B. GOLDIZEN,
GEORGE MANKLE.

238 & 239

United States Patent Office.

James R. Madison, of Oneida, Illinois.

Improved Washing-machine.

Specification Forming Part of Letters Patent No. 57,348, Dated August 21, 1866.

To all whom it may concern:

Be it known that I, James R. Madison, of Oneida, in the State of Illinois, have invented a new and Improved Washington-Machine; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings and the letters of reference marked thereon.

(Here follows drawing marked pages 236 and 237.)

Figure 1 is a side view of my machine. L is a crank; A, a balance or fly wheel. C is also a crank; D, a pitman; E, a sliding cogged rack, which slides on the guide-rod G. This cogged rack E gears into a cogged wheel, S. (See Fig. 3.) 1 2 3 are the pendulum rubbers or washers attached to three arms 4, (see Fig. 4,) and these arms are attached to a perpendicular shaft, on the upper end of which is the wheel S. By this construction the rubbers are made to revolve alternately from left to right and from right to left. O is the wash-box, in which the clothes are put to be washed.

Fig. 2 is an end view of my machine. A is the fly-wheel hung on the shaft M. On this shaft is a pinion-wheel that gears into a large cogged wheel, B, on the crank-shaft. This construction gives the fly-wheel greater velocity.

Fig. 3 is a top view of my machine. A is the fly-wheel on the shaft M; K, the pinion; B, the large cogged wheel; D, the pitman; F, the cogged rack; S, the cogged wheel on the shaft on which the rubbers 1 2 3 are suspended.

Fig. 4 is a top view of the arms on which the pendulum-rubbers 1 2 3 are hung.

Fig. 5 is a side view of the rubbers.

The clothes are put in the box O with the water, and on turning the crank L they are thoroughly cleansed in a few moments.

What I claim as my invention, and desire to secure by Letters Patent, is—

The rubbers 1 2 3, operated by the crank C and the pitman D, and the cogged rack F, in combination with the wheel S and fly-wheel A, when the same are constructed in the aforesaid combination, and for the purposes set forth.

JAMES R. MADISON.

Witnesses:

G. W. ROE.

G. F. DUNTLEY.

J. R. Madison,

Washing Machine,

N^o. 57,348.

Patented Aug. 21, 1866

Fig. 1.

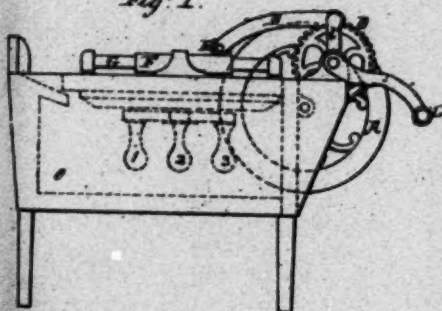


Fig. 2.

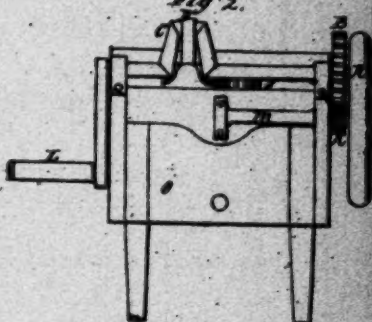


Fig. 3.

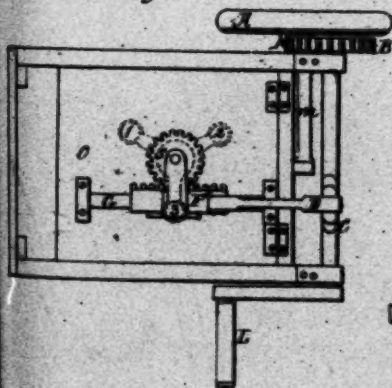


Fig. 4.

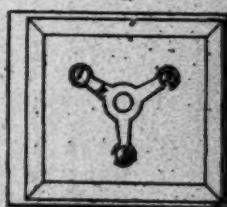


Fig. 5.

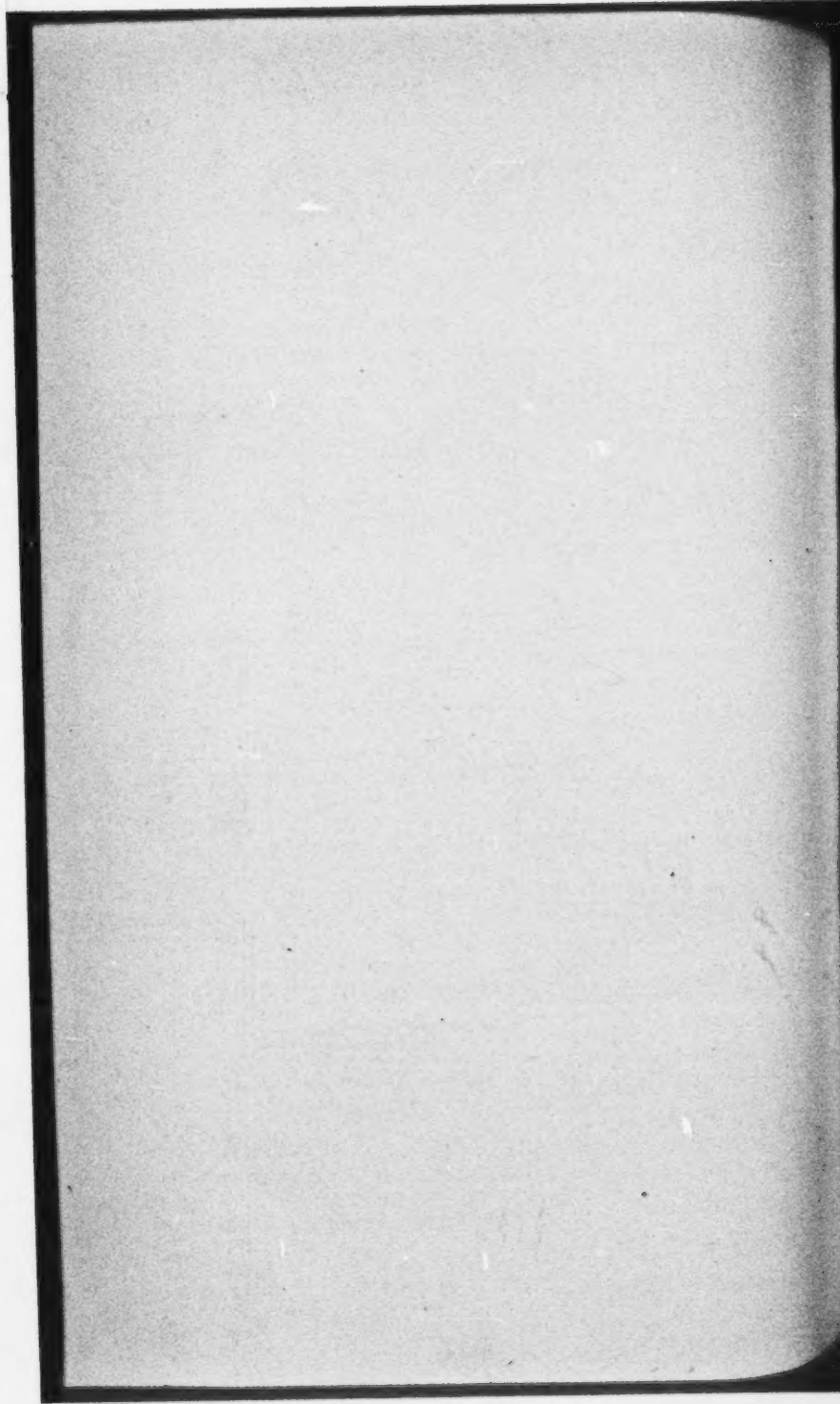


Witnesses:

A. B. Richmond
W. C. Ford

Inventor,

James R. Madison



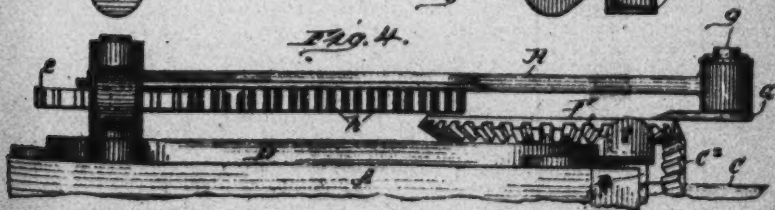
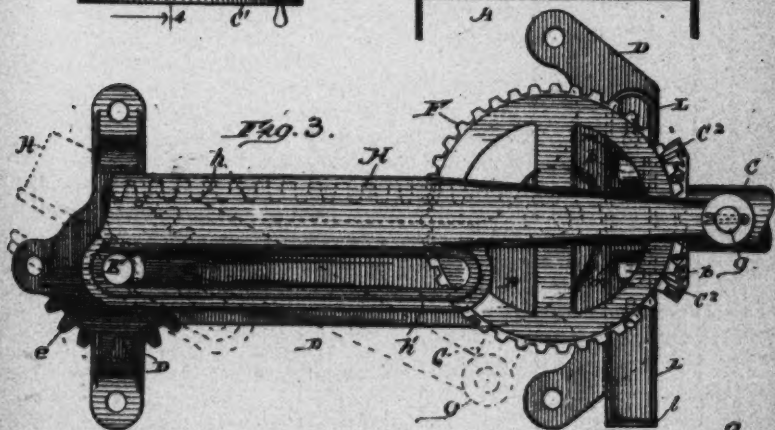
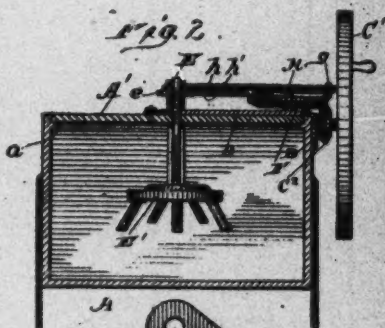
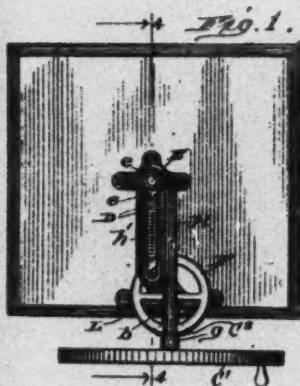
No. 699,185.

Patented May 6, 1902.

F. C. KAINER.
GEARING FOR WASHING MACHINES

(Application filed July 19, 1901.)

(No Model.)



Witnesses:

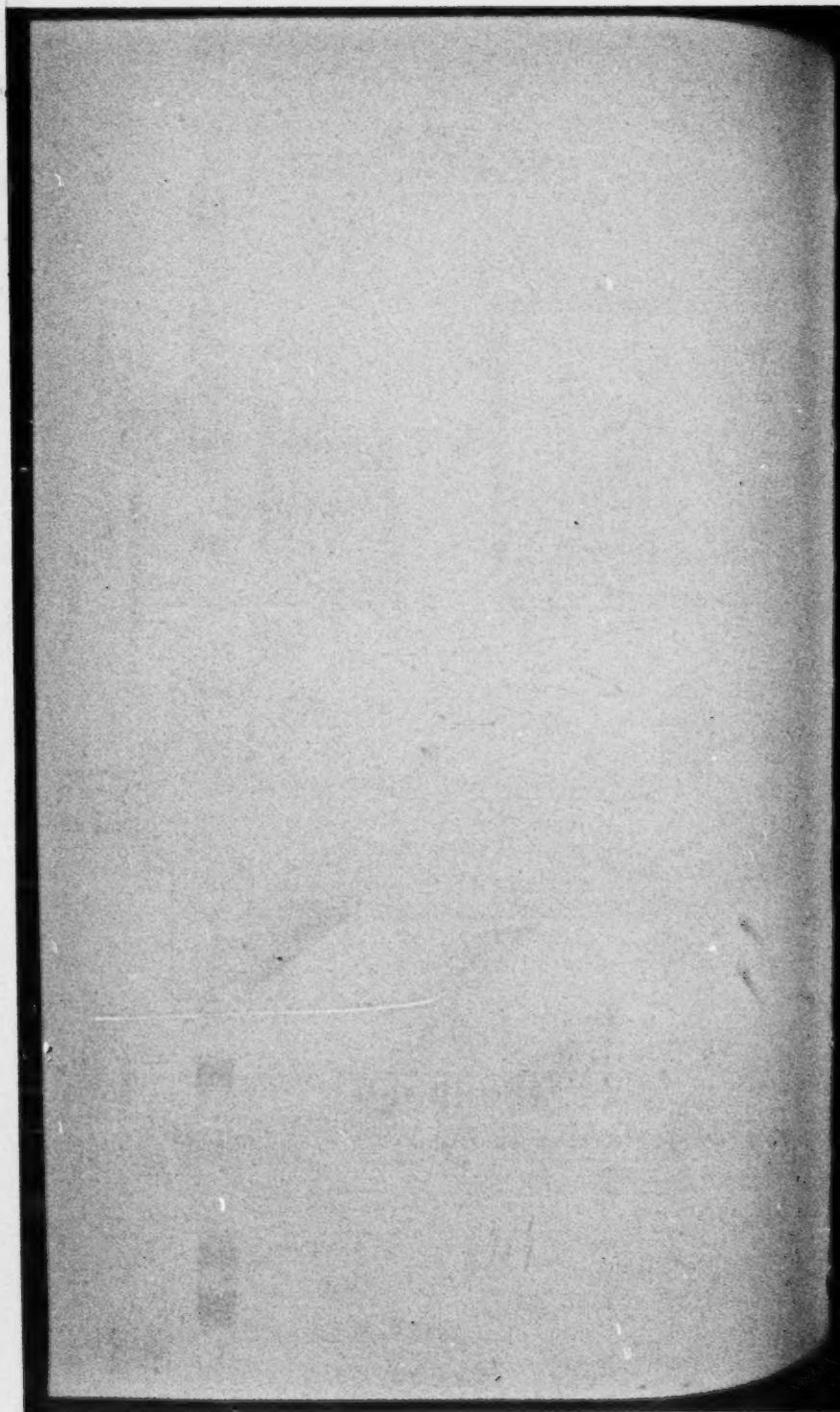
Chas. E. Sutton.

Walter A. Thomas.

Inventor:

Frederick C. Kainer.

By Chas. E. Tillingham
Att'y



242

United States Patent Office.

Frederick C. Kainer, of Chicago, Illinois.

Gearing for Washing-machines.

*Specification Forming Part of Letters Patent No. 699,185, Dated
May 6, 1902.*

Application Filed July 19, 1901. Serial No. 68,901. (No model.)

To all whom it may concern:

Be it known that I, Frederick C. Kainer, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Gearing for Washing-Machines, of which the following is a specification.

This invention relates to improvements in gearing to be used for washing-machines, churns, and other devices where an oscillatory motion of the rubber or dasher is desired; and it consists in certain peculiarities of the construction, novel arrangement, and operation of the various parts thereof, as will be hereinafter more fully set forth and specifically claimed.

The principal object of my invention is to provide a simple and inexpensive gearing for converting rotary motion into oscillatory motion or for imparting reciprocating movement.

Other objects and advantages of the invention will be disclosed in the subjoined description and explanation.

In order to enable others skilled in the art to which my invention pertains to make and use the same, I will now proceed to describe it, referring to the accompanying drawings, in which—

(Here follow drawings marked pages 240 and 241.)

Figure 1 is a plan view of a washing-machine and gearing therefor embodying my invention. Fig. 2 is a central vertical sectional view thereof. Fig. 3 is an enlarged plan view of the gearing detached from the machine, and Fig. 4 is a view in side elevation of the upper portion of the machine and the gearing.

Similar letters refer to like parts throughout the different views of the drawings.

A represents the box or tub of a washing-machine, which may be of any suitable size, form, and material, but preferably rectangular in shape, as shown in the drawings. The upper inner portion

of the box A is provided with a ledge *a*, on which the lid or cover A' will rest. This lid or cover is hinged at one of its edges to the box, as shown in Fig. 1 of the drawings. Secured at one side of the box and overlapping its upper edge is a bracket B, on the upper surface of which are formed or provided two lugs *b*, having lateral recesses, for the purpose presently to be explained. Journalled in a suitable bearing in the bracket B is the power-shaft C, on which is mounted a crank-wheel C' and also a bevel-gear C².

Secured to the upper surface of the lid A' is a plate or casting D, which extends from that edge of the lid or cover adjacent to the bracket B to about the middle of the lid or cover and has journalled vertically in said end an oscillatory shaft E, on the lower portion of which is secured a rubber or agitator E' of the ordinary or any preferred construction. On the upper portion of the shaft E is mounted a spur-gear *e*, which is shown in Fig. 3 of the drawings as being mutilated, but which may be a complete gear. Journalled on the plate D near the end thereof adjacent to the edge of the box is a beveled gear F, which meshes with the bevel-gear C² on the power-shaft. The bevel-gear F has a horizontally-projecting arm G, which carries a stub-shaft *g*, to which is pivotally secured one end of a rack-bar H, which bar is provided with gear-teeth *h* on its lower surface near one of its edges to engage the teeth of the gear *e* and is formed near its other edge with a longitudinal slot *h'* for the reception and operation of the upper end of the shaft E, as is clearly shown in Fig. 3 of the drawings. That end of the plate D adjacent to the power-shaft is provided with two openings to receive the lugs *b* on the bracket. A locking-bolt L, formed with slots *m*, through which the lugs *b* will pass, is slidably mounted on the upper surface of the plate D or casting. One end of the bolt L is provided with an upturned portion *l* to be used in engaging and disengaging it from the catches or recesses of the lugs *b* on the bracket.

When it is desired to raise the lid, the bolt L may be drawn in the proper direction by means of the projection *l* thereon, so that it will be freed from the lugs *b*, thus unlocking the parts.

By rotating the crank-wheel C' it is evident that the bevel-gear F will be rotated through its engagement with the bevel-gear C² and, through the instrumentality of the rack-bar H, will cause the rubber or agitator E' to oscillate.

Having thus fully described my invention, what I claim
243 as new, and desire to secure by Letters Patent, is—

The combination with a power-shaft, of a beveled gear, an oscillatory shaft suitably journalled, a gear on said shaft, a beveled gear journalled to engage the first-named beveled gear, a slotted rack-bar pivotally connected to the last-named beveled gear and engaging the oscillatory shaft and the gear thereon, substantially as described.

FREDERICK C. KAINER.

Witnesses:

HATTIE A. THOMAS.
CHAS. C. TILLMAN.

No. 750,243.

PATENTED JAN. 19, 1904.

F. T. BROSL.

GEARING FOR WASHING MACHINES.

APPLICATION FILED JULY 31, 1903.

NO MODEL.

3 SHEETS—SHEET 1.

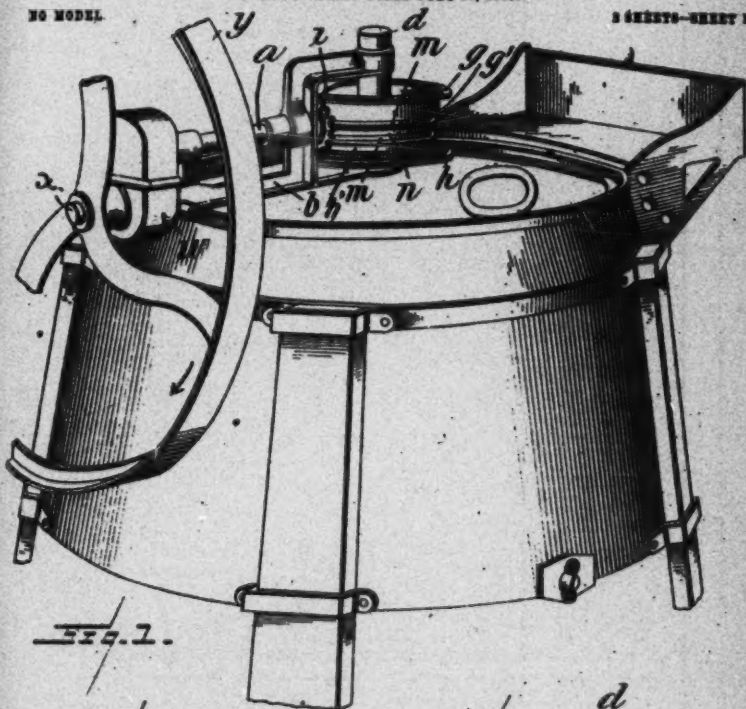


FIG. 1.

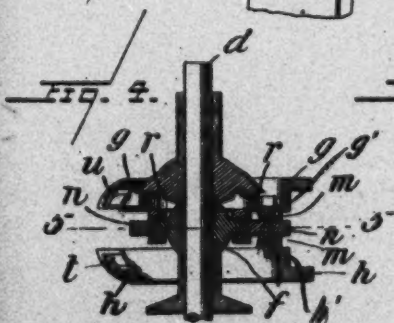


FIG. 2.

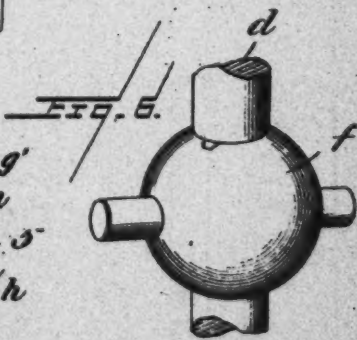


FIG. 3.

WITNESSES

Wm. F. Doyle

Wm. O. Ruchstein

INVENTOR

Friedrich T. Brosi

BY *Robert N. Young*



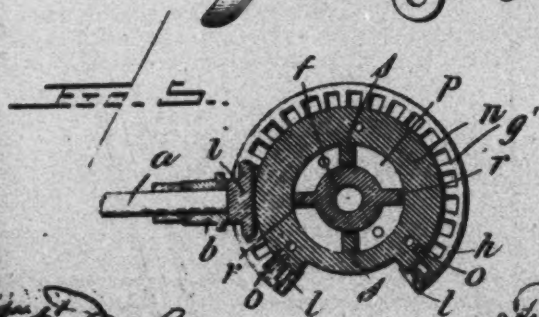
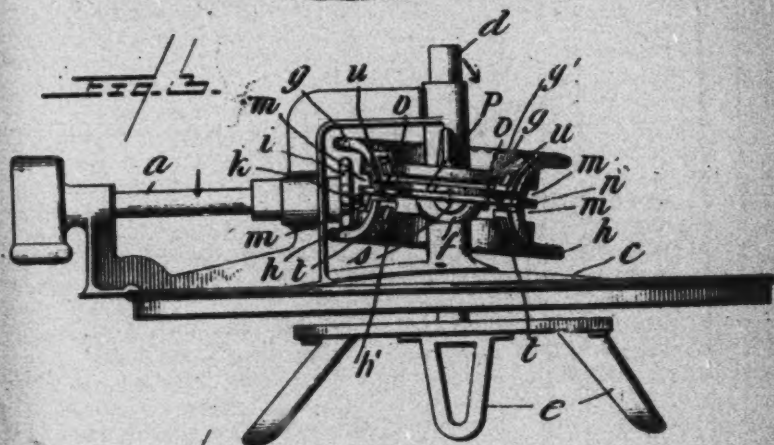
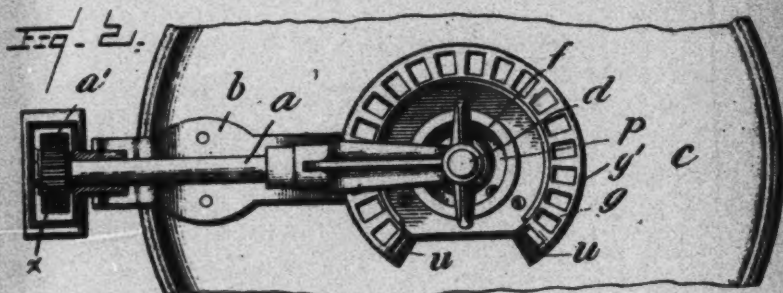
No. 750,243.

PATENTED JAN. 19, 1904.

E. F. BROSE.
GEARING FOR WASHING MACHINES.
APPLICATION FILED JULY 31, 1903.

NO MODEL.

2 SHEETS-SHEET 2.



Wm. O. Duckert
Wm. O. Duckert

INVENTOR
Frederick D. Dene
Robert H. Young

248

No. 750,243.

Patented January 19, 1904.

United States Patent Office.

Frederick T. Brosi, of Quincy, Illinois.

Gearing for Washing-machines.

*Specification Forming Part of Letters Patent No. 750,243, Dated
January 19, 1904.*

Application filed July 31, 1903. Serial No. 167,729. (No model.)

To all whom it may concern :

Be it known that I, Frederick T. Brosi, a citizen of the United States, residing at Quincy, in the county of Adams and State of Illinois, have invented certain new and useful Improvements in Gearing for Washing-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to power-transmitting mechanism of that type which is employed for converting a rotary movement in a single direction into an oscillatory movement; and one of the primary objects thereof is to provide such mechanism which will be compact, inexpensive, and durable and which is particularly adaptable for driving the agitator of a washing-machine from an ordinary drive-shaft having constant rotary movement in one direction.

To this end the invention includes the combination and arrangement of component parts and the details of construction to be hereinafter described, and particularly pointed out in the claims.

While the invention is susceptible of various modifications, I have shown in the accompanying drawings and shall hereinafter describe in connection therewith what is now conceived to be the preferred embodiment of -he same.

(Here follow drawings marked pages 244 and 247.)

In the drawings, Figure 1 shows in perspective view a washing-machine equipped with my improved mechanism. Fig. 2 is a plan view of the mechanism. Fig. 3 is a side elevation of the same. Fig. 4 is a transverse sectional view thereof. Fig. 5 is a view on the line 5 5 of Fig. 4, and Fig. 6 is a detail view.

The invention includes generally a drive-shaft carrying a pinion, a driven shaft, and a pair of horizontally-disposed racks connected at their ends by substantially right-angularly-extending portions or continuations thereof to provide in connection with the first rack one practically continuous elliptical rack with which the pinion referred to intermeshes.

As premised, my invention is designed particularly to be embodied in a washing-machine, and I have shown the same in the accompanying drawings in this association.

The drive-shaft (designated by the letter *a*) is shown as journaled in suitable bearings formed in a bracket *b*, which is bolted to the top or cover *c* of the washing-machine, and the driven shaft, which is indicated by the letter *d*, is shown as vertically-disposed, extending axially through the cover and carrying at its lower end an agitator *e*.

Fixed upon the shaft *d* is a hub *f*, from which the rack mechanism is supported so as to be capable of partaking of a tilting movement. This mechanism includes in the present exemplification of my invention two horizontally-disposed rack-sections *g h*, each curved to form part of a complete circle concentric to the shaft *d*, the adjacent ends of which are connected by vertically-disposed continuations or end sections which form, with the sections *g h*, a complete elliptical track.

Upon the inner end of the shaft *a* a pinion *i* is fixed, which works between the racks *g h* and is of slightly less diameter than the distance between the same, and consequently when in mesh with one of said racks said pinion runs free of the other. To retain the pinion in operative connection continuously with the endless rack, so as to drive the shaft *d* constantly during the rotation of the shaft *a*, means are provided for controlling the position thereof. This means preferably comprises a projection *k*, extending axially from the pinion, coacting with a guideway *m* in the rack-frame. This guideway is preferably formed by a ring *n*, interposed between the body portions *g'* and *h'* of the two rack-sections, to which said body portions are bolted with interposed spacing-lugs. The spaces formed by said lugs between the upper and lower sides of the ring and the edges of the body portions of the adjacent rack-sections constitute the horizontal portions of the guideway, and the vertical portion connecting said horizontal portions to provide an elliptical guide parallel with the elliptical rack is formed by recesses *o* in the periphery of said ring. The two rack-sections *g h* and the integral end continuations thereof are each cast in one piece with the body portion referred to and constitute, in combination with the ring described, what might be termed the "rack" mechanism.

249 As premised, this mechanism is supported from the hub *f* in such a manner that it may tilt as the pinion reaches the ends of the elliptical track. In the present exemplification of my invention the supporting means referred to include a ring *p*, arranged within and concentric with the first ring, pivoted to the hub at diametrically opposite points *r r* and pivoted to the first ring at diametrically opposite points *s s* a quarter-turn from the pivotal

connections *r r*. In the operation of the mechanism, assuming that the pinion is in mesh with the upper rack *g* and the shaft *a* is rotating in the direction indicated by the arrow, the shaft *d* will be tilted in the direction indicated by the arrow until the end portion *t* of the rack comes into mesh with the pinion, when the entire rack mechanism will be lifted and the pinion in the continued rotation of the same will mesh with the rack *h*. The direction of rotation of the shaft *d* will then be reversed, and upon the pinion coming into mesh with the end *u* of the rack or end portion of the continuous rack the entire rack mechanism will be depressed and the pinion will re-engage with the *tenth* of the rack *g*.

The shaft *a*, hereinbefore described, is driven from a shaft *x*, having a hand-operating wheel *y*. For transmitting the rotation of the shaft *x*, which finds bearings in suitable brackets secured to the tank of the machine, a pair of pinions *a' x'* are employed, which are fixed to the shafts *a x*, respectively, and said pinions are consequently separated each time the cover is thrown back and automatically reengaged upon the cover being closed, the pinion *a'* when in operative position resting directly upon the pinion *x'*. The pinions are housed in a sectional casing *w*, one section of which is carried by the cover and constitutes a part of the bracket *b*, while the other section of the casing is carried by the tank.

The construction and operation of my invention will be understood upon reference to the foregoing description and accompanying drawings, and it will be appreciated that the arrangement and combination of parts recited may be varied within a wide range without departing from the spirit and scope thereof.

Having thus described my invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. In transmitting mechanism and in combination, a drive-shaft, a driven shaft, rack mechanism comprising parallel sections and end-connecting portions, a hub on the driven shaft, supporting means interposed between the same and the rack mechanism to permit of the tilting of the latter, and a pinion carried by the drive-shaft coacting with the rack, substantially as described.

2. In transmitting mechanism and in combination, a drive-shaft, a driven shaft, rack mechanism comprising parallel sections and end-connecting portions, a hub on the driven shaft, supporting means interposed between the same and the rack mechanism to permit of the tilting of the latter, including a ring pivoted to the hub and to the rack mechanism, and a pinion fixed to the drive-shaft, substantially as described.

3. In transmitting mechanism for converting a rotary movement in one direction into an oscillatory movement and in combination, a drive-shaft, a driven shaft, rack mechanism including two horizontally-disposed rack-bodies carrying rack-sections curved in a horizontal plane, and end continuations curved in substantially vertical planes, a ring interposed between said body portions and separated a distance therefrom to provide a guideway, a hub on the driven shaft, a second ring arranged in the first concentric therewith,

pivots diametrically arranged for connecting the rings, other pivots diametrically arranged for connecting a second ring to the hub, and a pinion mounted on the drive-shaft, substantially as described.

4. In transmitting mechanism for converting a rotary movement in one direction into an oscillatory movement and in combination, a drive-shaft, a driven shaft, rack mechanism associated with the latter comprising two horizontally-disposed rack-bodies carrying rack-sections curved in a horizontal plane and end continuations curved in substantially vertical planes, a hub on the driven shaft, supporting means interposed between the same and the rack mechanism to permit of the tilting of the latter and a pinion carried by the drive-shaft coacting with the racks, substantially as described.

5. In a transmitting mechanism for converting a rotary movement in one direction into an oscillatory movement and in combination, a drive-shaft, a driven shaft, rack mechanism associated with the latter comprising two horizontally-disposed rack-bodies carrying rack-sections curved in a horizontal plane and end continuations curved in substantially vertical planes, a hub on the driven shaft, supporting means interposed between the same and the rack mechanism to permit of the tilting of the latter and a pinion designed to engage with first one and then another section of the rack, a projection upon said pinion coacting with a guide-way between said rack-sections, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

FREDERICK T. BROSI

Witnesses:

JENNIE CRANSTON.

H. M. SWOPE.

No. 708,444.

Patented Sept. 2, 1902

D. B. WILLOCK.

REVERSING MECHANISM FOR WASHING MACHINES.

(Application filed Oct. 26, 1901.)

(No Model.)

5 Sheets—Sheet 1.

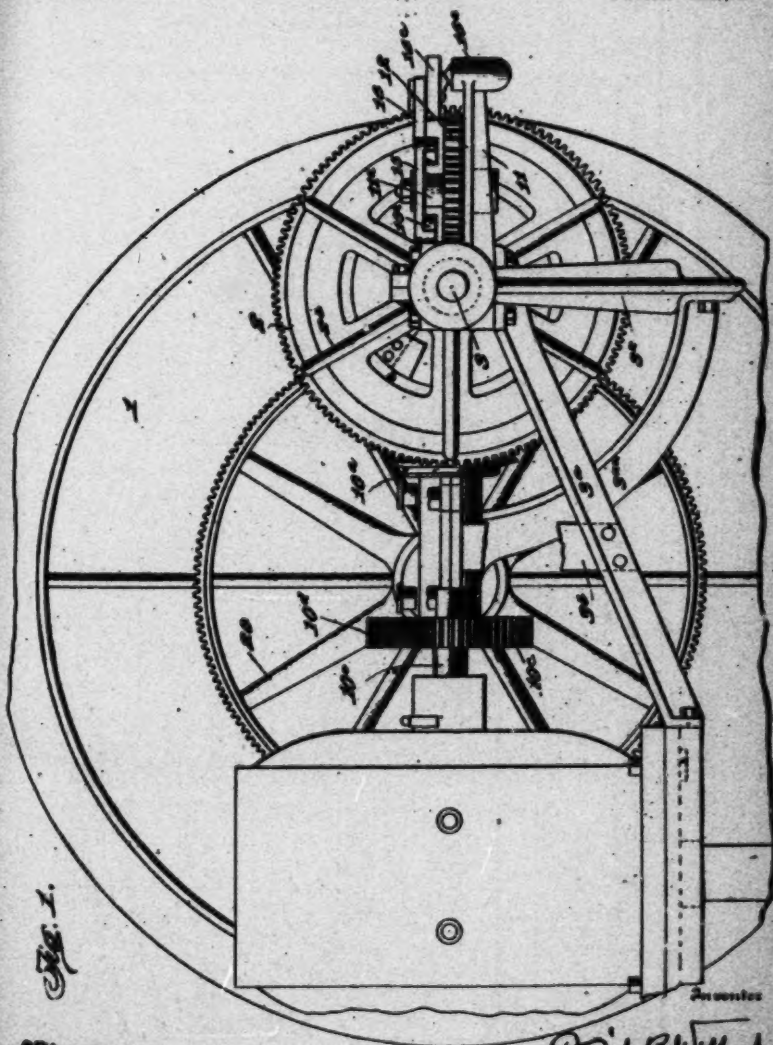
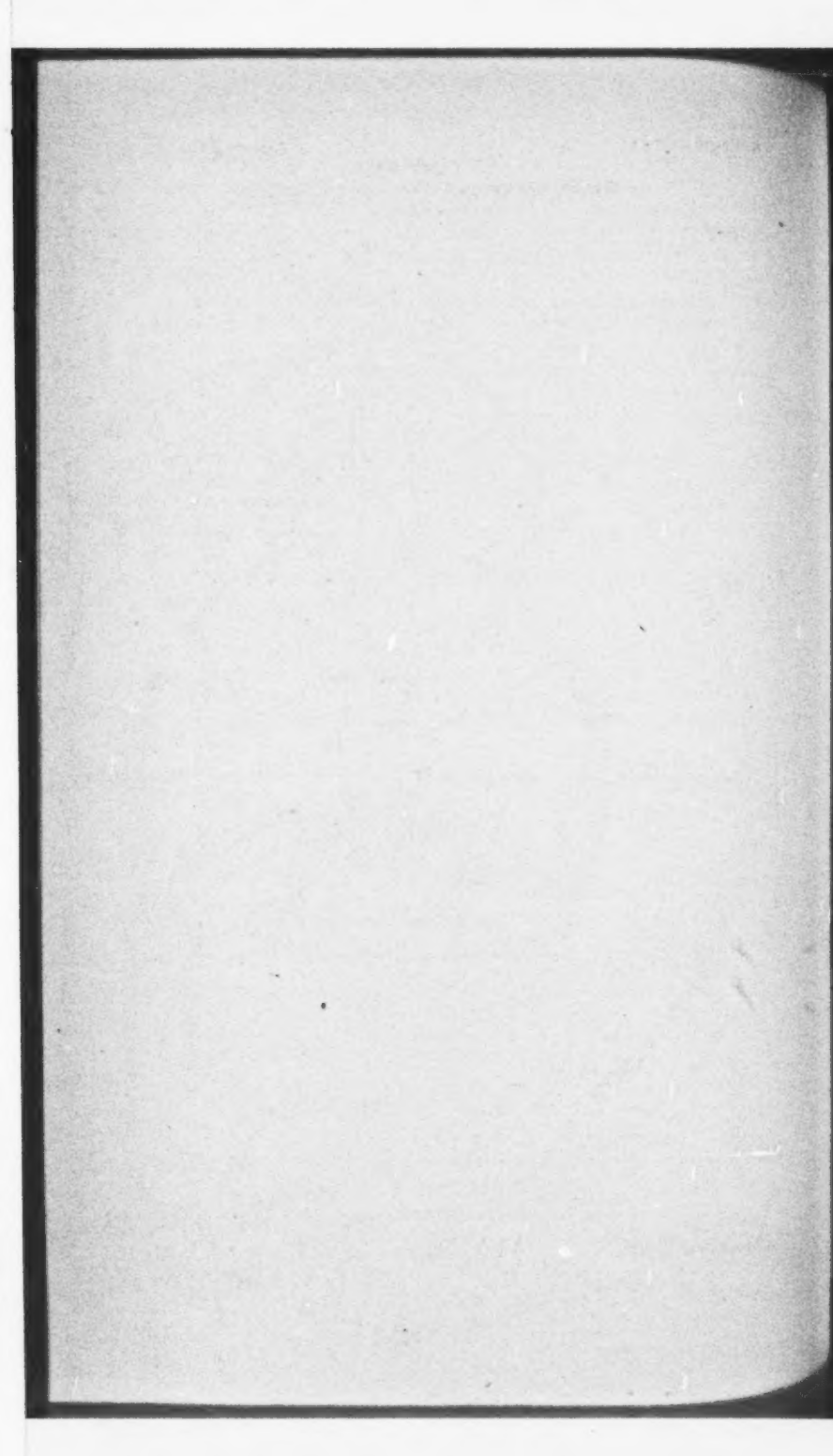


Fig. 1.

Witnessed
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301

David B. Willock
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J. J. Hamilton
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No. 708,444.

Patented Sept. 2, 1902.

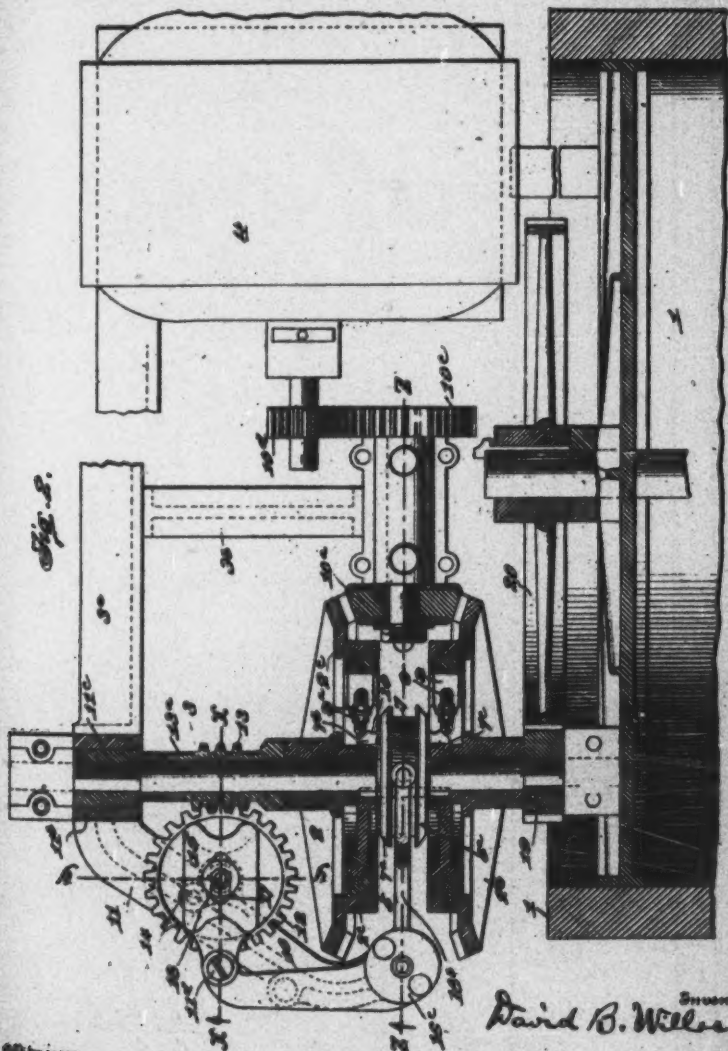
D. B. WILLOCK.

REVERSING MECHANISM FOR WASHING MACHINES.

(Application filed Oct. 26, 1991.)

(No Model.)

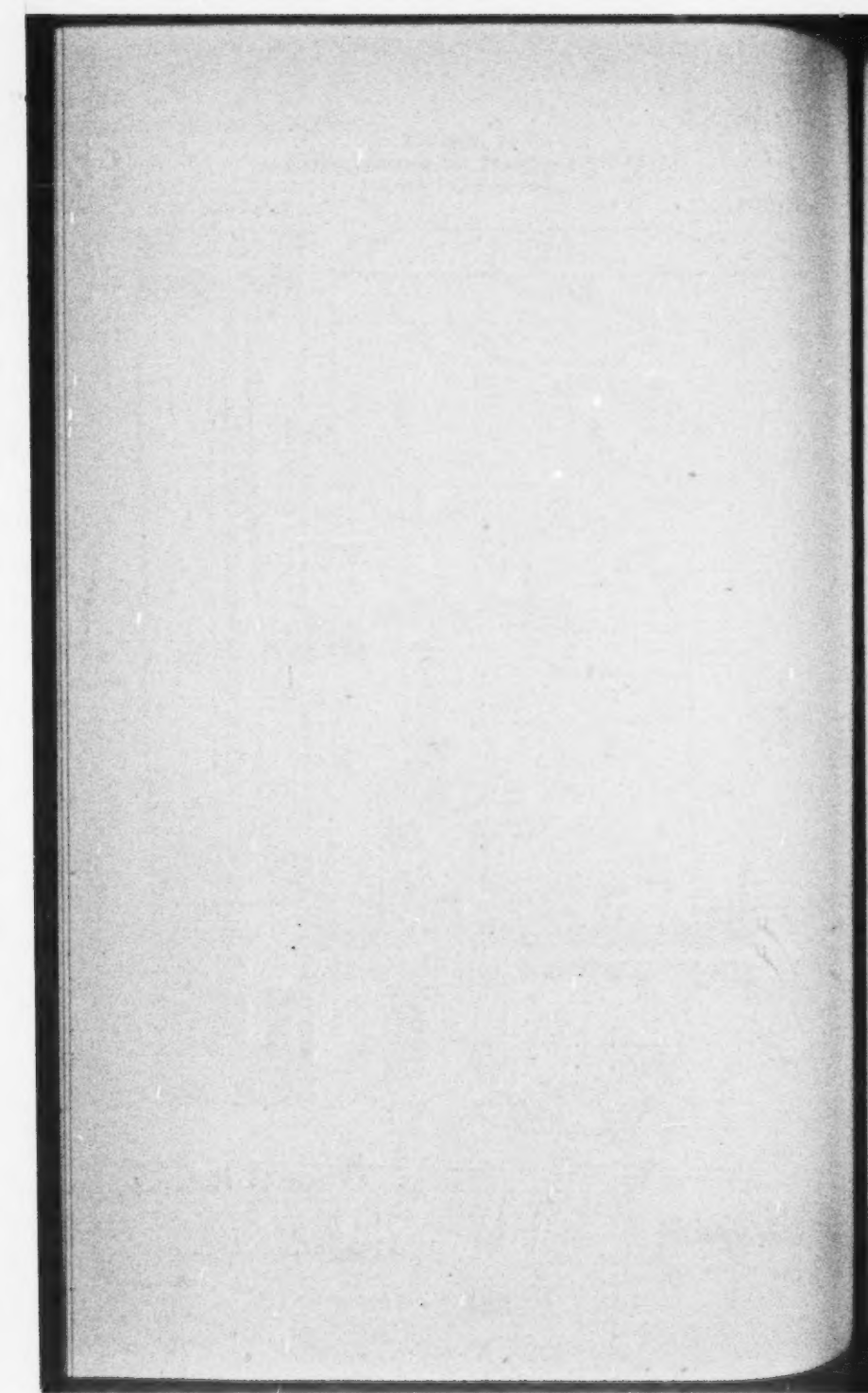
5 Sheets—Sheet 2



Wm. B. Bell.
George F. Rivington.

David B. Wilcock ^{Inventor}

by Johnston



D. B. WILLOCK.

REVERSING MECHANISM FOR WASHING MACHINES.

(Application filed Oct. 26, 1901.)

No Model.)

5 Sheets—Sheet 2.

Fig. 4.

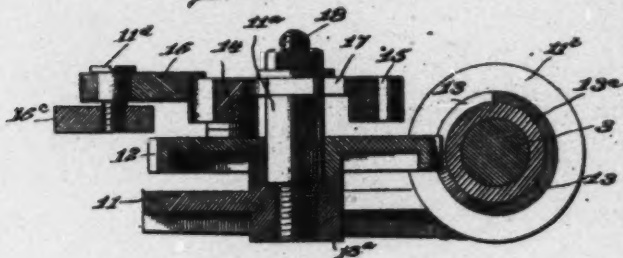


Fig. 5.

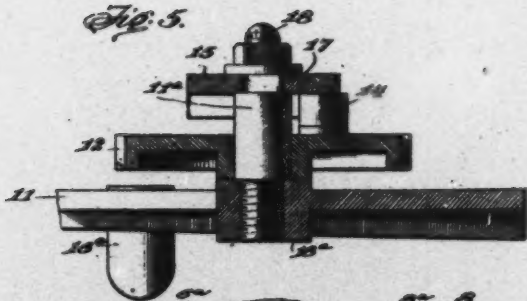
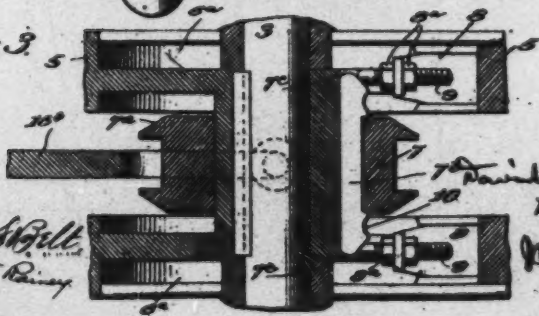
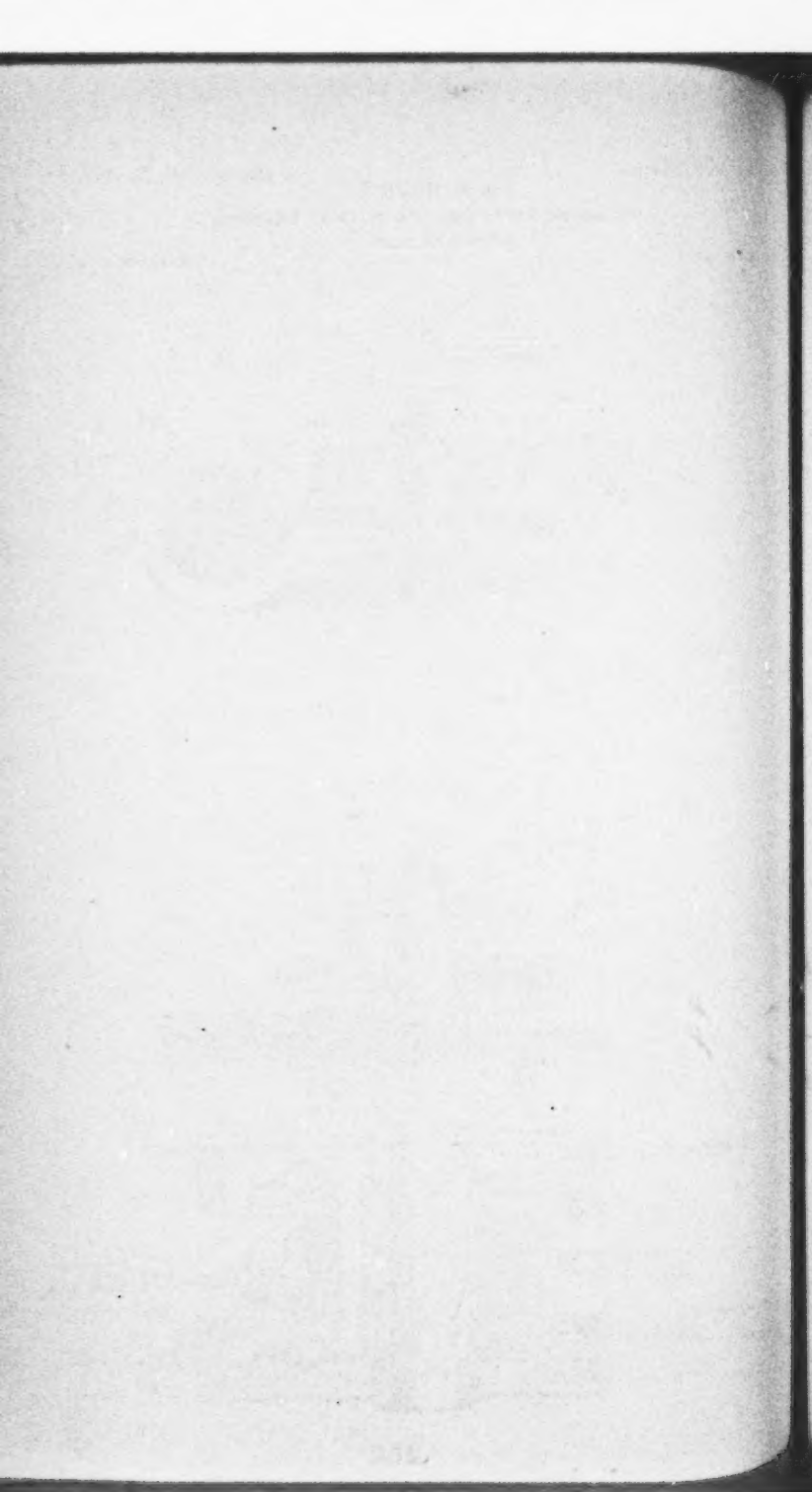


Fig. 3.



Witnesses
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 Attorney



No. 708,444.

Patented Sept. 2, 1902.

D. B. WILLOCK.

REVERSING MECHANISM FOR WASHING MACHINES.

(Application filed Oct. 26, 1901.)

(No Model.)

5 Sheets—Sheet 4.

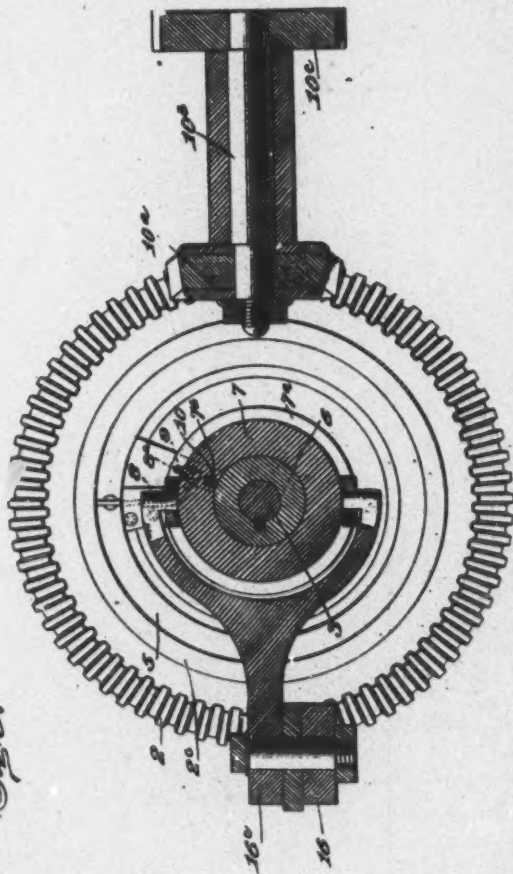
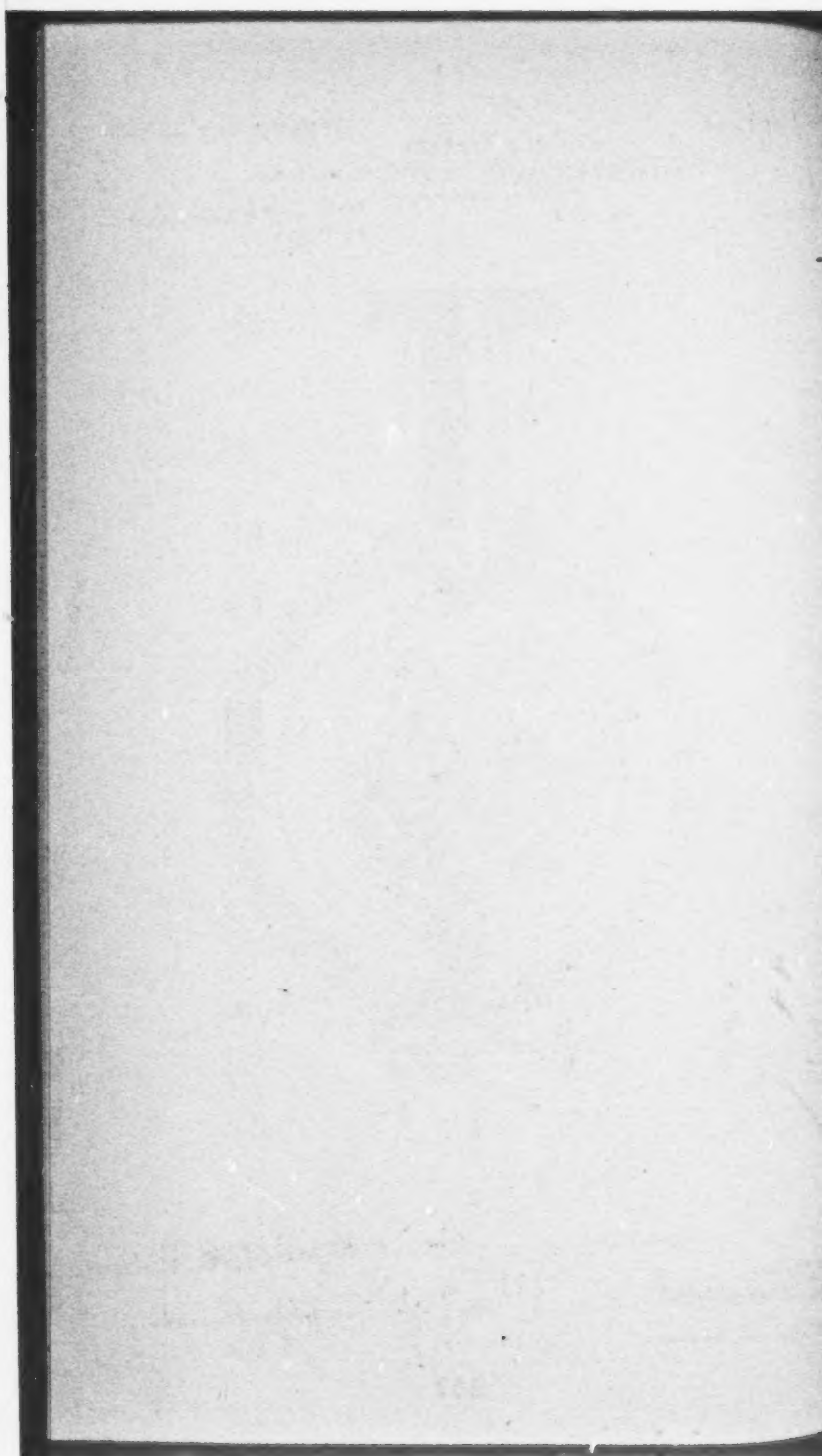


Fig. 4.

Witnesses
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No. 708,444.

Patented Sept. 2, 1902.

D. B. WILLOCK.

REVERSING MECHANISM FOR WASHING MACHINES.

(Application filed Oct. 28, 1901.)

(No Model.)

5 Sheets—Sheet 5.

Fig. 1.

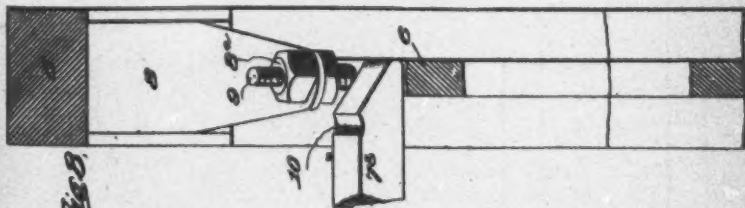
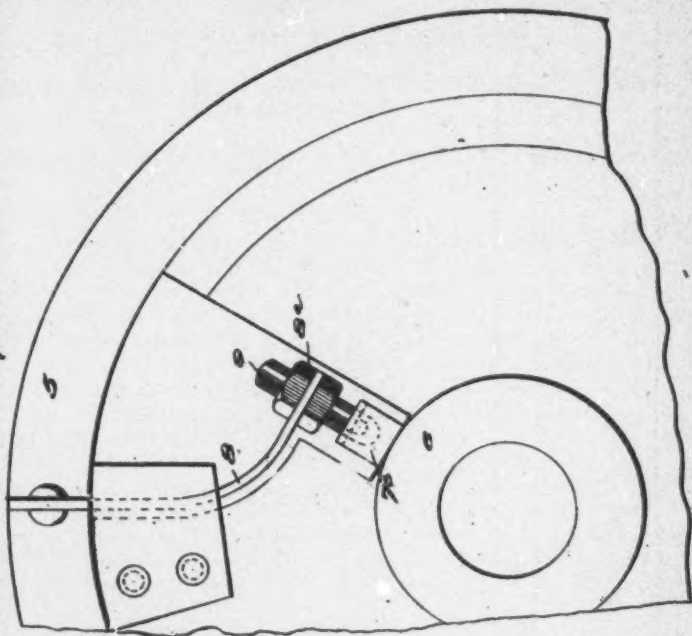
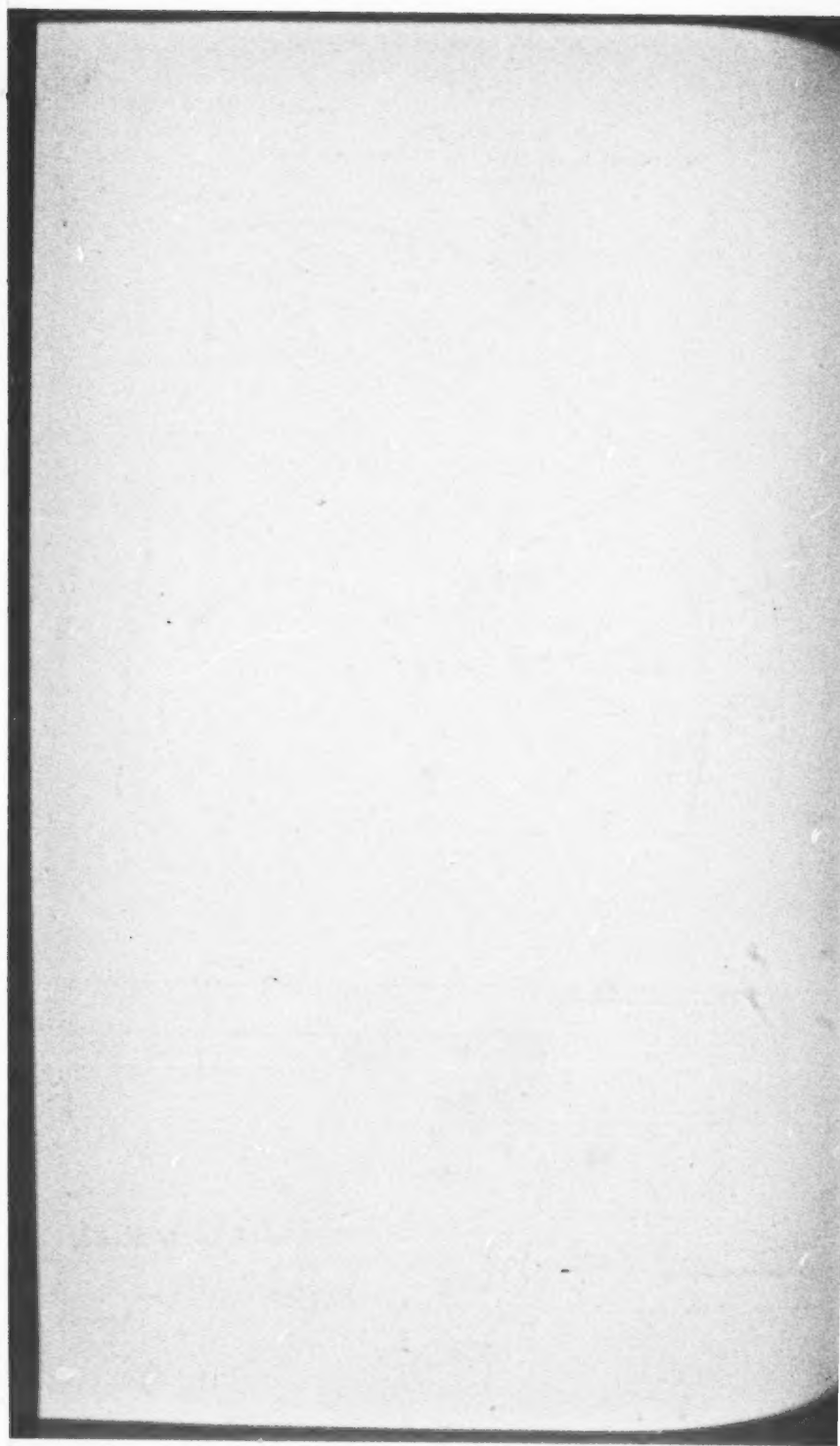


Fig. 2.

Witnesses
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260

United States Patent Office.

David B. Willock, of Kansas City, Missouri.

Reversing Mechanism for Washing-Machines.

Specification Forming Part of Letters Patent No. 708,444, Dated September 2, 1902.

Application Filed October 26, 1901. Serial No. 80,102. (No model.)

To all whom it may concern:

Be it known that I, David B. Willock, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Reversing Mechanism for Washing-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in motors for washing-machines, more particularly as required in laundries.

It has for its object, among other things, principally to dispense with the use of belt-power or belting, two belts, one crossed, being usually employed for obtaining the requisite movement of the operative parts in effecting the washing action, which belts are greatly objectionable, notably because of uncertainty of action, dirt-producing, &c., while all pulleys, shafts, &c., therefor are accordingly omitted.

It consists, primarily, of actuating and reversing mechanism for the main driving gear or shaft of the operative parts of the washing-machine and of the detailed construction, arrangement, and combination of parts, substantially as hereinafter more fully disclosed, and specifically pointed out by the claims.

(Here follow drawings marked pages 250-259.)

In the accompanying drawings, illustrating the preferred embodiment of my invention, Figure 1 is a side view. Fig. 2 is a horizontal section, partly in plan. Fig. 3 is a detailed view more particularly of the cam mechanism between the beveled gear and the clutch mechanism. Fig. 4 is a section taken through Fig. 2 on the line *x x*. Fig. 5 is a section taken on the line *y y* of Fig. 2. Fig. 6 is a section taken on the line *z z* of Fig. 2. Fig. 7 is a broken detached view more especially of the key or clamp and adjusting or holding screw and

spring of the clutch or coupling. Fig. 8 is a view of the same part at right angles to the last-named view.

In carrying out my invention I suitably arrange contiguously to the washing machine or apparatus, housed or incased, as at 1, duplicate properly-spaced-apart beveled pinions or gear-wheels 2 2, with their cogs opposed to each other and having sleeves or hubs at their central outer ends, through which passes a common shaft 3. Said shaft is suitably mounted in position at one end, preferably upon castings or arms 3^a 3^x, one bolted at its lower or inner end to a base or foundation piece, upon which is supported the motor proper, 4, the inner or higher end of said casting or arm having a box bolted thereto to receive and constitute a suitable bearing for said end of said shaft. The opposite end of the shaft 3 is suitably supported or journaled in a boxing securely bolted to the part or casing 1 of the machine or apparatus, as seen in Fig. 2. The arm or support 3^x has preferably bolted to its lower end an additional support or arm 3^{xx}, arranged at right angles thereto and suitably secured at its upper end to any convenient point, as shown. Said pinions or wheels have preferably their rims connected spider fashion or by arms or spokes 2^b 2^b to their sleeves laterally of their radii, and each has an integral annular or circular portion 2^c, arranged or fitting within which is a ring 5, the function of which will be presently apparent.

Upon the shaft 3, intermediately of the pinions 2 2 and suitably keyed to it, is a frictional hub 6, having lateral circular extensions 6^a at its edges, occupying the space between said hub and said ring 5, said extension 6^a being preferably elongated laterally at its outer edge or circumference to effect an extended area or surface of contact with said ring.

A circumferentially-grooved collar 7, having lateral flanges 7^a, preferably having outer beveled edges, is arranged upon the frictional hub 6 between its lateral circular portions 6^a and has inserted transversely through it a key or spline 7^b, providing for its turning with said hub keyed to the shaft 3, as before stated. Said Key 7^b, adapted to have endwise movement or to slide in its seat or way 7^c in said hub and collar, is beveled or tapered at its ends, as at 7^d, and is adapted to be alternately moved in either direction so as to be brought into action, as presently described, for either of the beveled wheels. Said rings have suitably connected thereto upon their inner circumferences stout plate-springs 8, one being applied to each ring, and
261 through or in each plate or spring, near one end, is inserted

and held firmly therein by jam-nuts 8^a a screw-bolt 9, preferably rounded at its engaging end, as more clearly shown in Fig. 7. It will be noted that as the spline or cam 7^b is so moved, by accordingly moving the collar 7, as presently described, that one of said screw-bolts 9 shall be engaged by one of the beveled ends of said spline or cam, increased tension or stress will be imparted or transmitted to said spring accordingly, producing a binding action between the frictional hub 6, the shaft 3, and the rings 5, carried by the corresponding beveled pinion 2, thus frictionally coupling up said shaft and pinion. Simultaneously the key or cam 7^b will

thus be locked in position as against involuntary endwise movement or displacement.

A small beveled pinion 10^a, adapted to simultaneously drive or gear with the larger corresponding pinions or wheels 2, is carried by a shaft 10^b, whose boxing is suitably supported by a branch arm 3^b of the support or casting 3^a. Said shaft 10^b has fixed to one end a right-line-toothed pinion 10^c, geared to the pinion 10^b of the motor-shaft 10^c, thus providing for actuating the driving-pinion 10^a, imparting motion to the beveled pinion 2. It will be seen from this arrangement that both of the beveled pinions 2 being driven by this same pinion 10^a they are rendered capable of receiving simultaneously a reverse movement—i. e., being revolved in opposite directions at the same time—the motion of only one of which, however, being communicated at one time or operation to the shaft 3 and finally to the washing apparatus, as presently explained.

A bracket or arm 11, having a sleeve 11^b at one end inserted upon the tubular or cylindric portion 11^c of the casting or support 3^a and suitably fixed in position, has a stud or projection 11^a extending laterally therefrom. Upon the stud or projection 11^a is hung or mounted a worm-wheel 12, meshing with a worm or screw 13, formed upon a sleeve 13^a, abutting the sleeve or hub of one of the beveled pinions 2 and suitably fixed to the shaft 3. Said worm-wheel 12 has a lateral roll-equipped stud 14, and suitably hung from the arm or bracket 11, as at 11^d, is a peculiarly-constructed cam 15, having lateral opposite inwardly-convexed surfaces or faces 15^a, with which engages said roll-equipped stud of said worm-wheel. An angular lever 16, carried by the cam 15, is pivoted to a disk 16^c, having a pivot upon its lower side bearing in a socket 16^a, cast or integral with the free end of the arm 11, and this lever has two or duplicate prongs or a shipper 16^b. These prongs have their inner ends embracing and connected to the hub-embracing collar 7 about centrally thereof in its peripheral or circumferential groove. Said cam 15 has a vertical elongated slot 17, which receives a stud or pin 18, secured, as at 18^a, to the arm 11. A pinion 19, secured upon the opposite end of the shaft 3, is geared or meshed with the main driving gear-wheel 20, secured upon the shaft of the washing apparatus or machine for actuating the last-named therethrough from the motor, as will be readily understood. It will therefore be seen that as motion is transmitted to the gear wheels or pinions 2 by the moving of the pinion 10^a into gear therewith, one of said gear-wheels having been previously shipped or moved so as to effect connection thereof with the shaft 3 by means of the frictional coupling or clutch, as before explained, rotation will be imparted to said shaft, which will continue to rotate a limited period, actuating through intermediate gearing, shafts, &c., the washing apparatus. During such operation or action of parts the shaft worm of screw 13 being in mesh with the worm-wheel 12 the last-named will be actuated, causing its roll-equipped stud 14 to engage one convex surface or face 15^a of the cam 15. Said cam will be shifted under this action, being free to conform to the obliquity of movement thus imparted thereto by reason of its elongated slot and pin or stud connection 17,

18 and carry with it and so dispose the angular lever 16 as to accordingly deflect its shipper 16^b correspondingly moving or sliding the collar 7, in turn carrying its key or cam 7^b, let into the frictional hub 6, laterally into engagement with the opposite beveled end of the screw-bolt 9. Said bolt yielding because of the flexibility of its suspending-spring 8 will permit the passage of said end of said key or cam thereunder, increasing the tension of stress of said spring and accordingly jamming the frictional hub 6, the ring 5, equipped with said spring and screw-bolt, and said key or cam between the gear-wheel 2 and shaft 3. This, it is obvious, effects the connecting or coupling together of the opposite or previously-uncoupled gear-wheel and said shaft, starting the rotation of the shaft in the opposite direction, accordingly effecting the reversal of the washing operation, all without the use of belting, &c., consequently avoiding the objections and disadvantages thereof, as above noted. Said action of parts will be repeated at intervals throughout such washing operation.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In reversing mechanism of the character described, the combination of a driven shaft, gearing loosely arranged thereon, a shiftable coupling arranged to slide upon said shaft and yet turn therewith, a driving-shaft geared to the said driven shaft, means for shifting said coupling, means for oppositely actuating said shifting means from said driven shaft, and spring-pressed means for engaging said coupling with either of the gears of said driven shaft, substantially as set forth.

2. In reversing mechanism of the character described, the combination of a driven shaft, gearing loosely arranged on
262 & 263 said shaft, a shiftable coupling arranged to slide on said shaft and yet turn therewith, a driving-shaft geared to said driven shaft, means for shifting said coupling, means for oppositely actuating said shifting means from said driven shaft, a bevel-ended notched bar carried by said coupling and spring-pressed studs carried by said gearing and adapted to engage said notched bar, substantially as set forth.

3. In apparatus of the character described, automatically-reversing mechanism comprising a common shaft, gearing loosely mounted upon said shaft, spring-equipped rings concentric with said gearing, a laterally-movable shipping-collar arranged on said shaft, intermediately of said gears, a cam carried by said collar, means applied to the springs of said rings for engaging said cam, means for automatically actuating from said shaft said collar, and means for actuating said shaft, substantially as set forth.

4. In apparatus of the character described, automatically-reversing mechanism comprising a common shaft, duplicate gears loosely arranged upon said shaft, an intergeared worm gearing and wheel arranged in connection with said shaft, means to couple up said shaft and said duplicate gearing, means to effect connection between said worm-gearing, and said means of coupling and means for actuating said shaft, substantially as set forth.

5. In apparatus of the character described, automatically-reversing mechanism comprising a common shaft, duplicate gears loosely arranged thereon, a gear common to the first-named gearing, a worm-and-wheel gearing arranged in connection with said shaft, a cam suitably arranged in position, and a lever carried by said cam, said cam being engaged by a projection on said wheel, and means actuated by said lever and adapted to effect the coupling of said shaft and said duplicate gearing, substantially as set forth.

6. In apparatus of the character described, automatically-reversing mechanism comprising a common shaft, duplicate gears arranged loosely thereon, a worm and friction-coupling arranged in connection with said shaft, spring-equipped rings carried by said duplicate gearing, screw-bolts carried by said springs of said rings, a hub interposed between said duplicate gearing and rings, a collar applied to said hub and equipped with a bevel-ended cam adapted to engage said screw-bolts, means for effecting connection between said worm-and-wheel gearing and collar to move the last-named with its cam endwise, and means for actuating said shaft, substantially as set forth.

7. In apparatus of the character described, automatically-reversing mechanism comprising a shaft, duplicate gears adapted to be driven simultaneously in opposite directions, means for clutching or coupling said duplicate gearing and shaft together, a worm-and-wheel gearing actuated from said shaft, a cam suitably arranged in position, and actuated from said worm-and-wheel gearing, and a lever carried by said cam and having prongs or a shipper engaging said coupling, and means for transmitting motion from said shaft, substantially as set forth.

8. In apparatus of the character described, automatically-reversing mechanism comprising a shaft, duplicate gears loosely mounted thereon, means for simultaneously driving the wheels of said gearing in opposite directions, means for coupling said gearing and said shaft together, worm-and-wheel gearing arranged upon said shaft, a cam having lateral opposite convexed surfaces or faces and a slot therethrough a fixed pivot pin or stud passing through said slot, a lever carried by said cam and a shipper carried by said cam and connected up with said coupling, means for actuating said lever from said cam, and means for transmitting motion from said shaft, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

DAVID B. WILLOCK.

Witnesses:

C. J. TOMPKINS.

EDWARD P. CLARK.

264 No. 1350. [British Court of Arms.] A. D. 1889.

Date of Application 24th Jan., 1889.

Complete Specification Left, 24th Oct., 1889—Accepted, 30th Nov., 1889.

Provisional Specification.

Improvements in Washing Machines.

I, William Shedlock, of Thurleigh Road, Wandsworth Common in the county of Surrey, Engineer do hereby declare the nature of this invention to be as follows:—

My invention relates to washing machines and is designed to improve the construction of the same.

My said invention relates more especially to washing machines of that kind or class in which a suitable receptacle for the articles to be washed is caused to rotate by means of suitable gearing in a box or case containing the water or other liquid. My said invention is however applicable to other washing machines.

The main object of my said invention is to provide means for performing two washings in one machine, and thus saving the labour entailed by removing the articles being washed from one machine to another.

By my said invention moreover I reduce the cost of the apparatus required for performing a given quantity of work, and provide various other improvements hereinafter set forth.

In carrying my said invention into practice I prefer to employ the following arrangement, that is to say I provide a suitable box or case having a partition placed centrally in the same so as to form two chambers or compartments. In each of these chambers or compartments I provide a rectangular or other suitably shaped receptacle for the articles intended to be washed or cleaned. These receptacles have gudgeons carried in suitable bearings in the said cylindrical box or case and any convenient gearing is provided for rotating the said receptacles and if necessary for reversing their movement periodically. Suitable clutches or other means are moreover provided for throwing either of the said receptacles out of gear and thus arresting its motion whilst the other one is still rotating. The box or case is moreover provided with suitable doors permitting of access to the interior of the said chambers or compartments and to the receptacles therein. Upon the upper portion of the said box or case I provide a wringer of any suitable description.

The receptacles for the clothes are fitted with doors for permitting the introduction of the articles intended to be washed, and the said doors and the sides of the receptacles are perforated to allow free passage for the water or other liquid from the chambers or compartments in the cylindrical box or case. Upon the interior surfaces of the sides of the said receptacles are ribs or projections preferably ar-

ranged on alternate sides in a diagonal and parallel direction respectively to the said sides.

Two of the sides of each of the said receptacles are pivoted to the ends or extremities of the latter in such a manner that the opposite extremities of the said sides are capable of an inward movement. These sides are provided with arms or levers having pins or projections adapted to run in suitable grooves provided in the interior of the box or case, and are so arranged as to be acted upon by suitable cams simultaneously once or oftener in each revolution of the receptacles and thus to cause the said sides to move inwards. The articles contained in the said receptacles are thus squeezed or compressed between the movable sides, and the efficiency of the apparatus for washing or cleansing clothes or other articles is thereby greatly increased.

By thus forming my washing machine duplex or double I am enabled to wash or cleanse the articles contained in one chamber or compartment, and then pass them into the second chamber or compartment with or without passing them through the wringer. The clothes or other articles are thus subjected to two washings without the necessity of removing them from one machine to another at a greater or less distance therefrom, thereby saving labor and obviating

or diminishing the risk of the said clothes or other articles being soiled or damaged during the said removal, and moreover reducing the apparatus required to perform a given quantity of work.

Although I have hereinbefore described my said invention as applied to a washing machine with revolving receptacles having collapsible sides placed inside chambers or compartments in an outer box or case, it is obvious that I can employ any other suitable form of receptacles, or dispense with the said box or case and provide suitable receptacles arranged to be revolved or rotated in bearings in a suitable frame by means of one set of gearing.

It is obvious moreover that I can somewhat further modify my said invention without departing from the nature of my said invention.

Dated this 23rd day of January 1889.

HASELTINE, LAKE & CO.,
45, Southampton Buildings, London, W. C.,
Agents for the Applicant.

*Complete Specification.***Improvements in Washing Machines.**

I, William Shedlock, of Thurlough Road, Wandsworth Common, in the County of Surrey, Engineer, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

My invention relates to washing machines and is designed to improve the construction of the same.

My said invention relates more especially to washing machines of that kind or class described in the specifications of the following Letters Patent granted to me viz. No. 13,490 dated September 18th 1888, and No. 5506, dated March 30th 1889 that is to say, to washing machines in which a suitable receptacle for the articles to be washed is caused to rotate by means of suitable gearing in a box or case containing the water or other liquid.

My said invention is however applicable to other washing machines.

An important feature of my said invention consists in providing two rotating receptacles in one box or case, the latter being divided by a central partition so as to form two chambers or compartments, thus enabling two washings to be performed in one machine and saving the labour entailed by removing the articles intended to be washed from one machine to another.

Another feature in my said invention consists in the provision of suitable means for automatically reversing the motion of the receptacles at predetermined periods.

By my said invention moreover I reduce the cost of the apparatus required for performing a given quantity of work and provide various other improvements hereinafter set forth.

In the accompanying drawings I have shown how my said invention may be conveniently and advantageously carried into practice.

Figure 1 is a plan, and

Figure 2 a front elevation of my improved washing machine.

Figure 3 is a side elevation thereof partly in vertical section, drawn to an enlarged scale.

Figure 4 is a plan showing a modification of my improved automatic reversing gear hereinafter described.

Figure 5 is a front elevation.

Figure 6 a vertical longitudinal central section, and

Figure 7 a transverse section on the line *x, x*, Figures 5 and 6 showing an improved form of washing chamber which I prefer to employ in the said machine.

A A are standards or supports on which is mounted a box or case *a*. B, B¹ are the fast and loose pulleys. C is the main or driving shaft. The box or case *a* has a central partition *a** which divides the same

266 into two chambers or compartments. In each of these chambers or compartments I provide a rectangular or other suitably shaped receptacle *b* provided with gudgeons *c* whereby it is supported in suitable bearings *d*.

The receptacles *b* have movable sides pivoted to the ends thereof and provided with arms or levers *e* having rollers *e*¹ adapted to run in suitable cam grooves *f*. Suitable doors *a*¹, *b*¹ are provided for permitting access to the box or case *a* and receptacles *b* substantially as described in the said former specifications.

D, D are toothed wheels arranged to turn freely upon the gudgeons *c* so that the said gudgeons and consequently the receptacles *b* will not be rotated by the said toothed wheels except when the latter are put into gear with the said gudgeons as hereinafter described. E, E, are clutches one half or part of each of which is formed in one with or firmly attached to the boss of the corresponding toothed wheel D, the other half or part being arranged to slide freely upon the gudgeon *c* which extends through the box or case *a* but being prevented from rotating thereon by means of feathers or keys F in the gudgeons working in corresponding key ways provided in the said clutches. F¹ F¹ are levers pivoted at F² to brackets F³ secured to the box or case A and by means of which the said clutches or either of them may be thrown in and out of gear as desired.

In Figure 1 one of the said clutches E is shown in gear so that the receptacle *b* upon the corresponding side of the machine will be rotated under the action of the toothed wheel D, and the other clutch is shown out of gear, so that the corresponding toothed wheel D will rotate freely upon the gudgeon *c* without rotating the receptacle *b* connected with the said gudgeon. The motion of either or both of the said receptacles *b* can thus be arrested when desired without shifting the driving belt from the fast to the loose pulley.

G, G, are hand-wheels keyed or otherwise firmly secured upon the extremities of the gudgeons *c*, by means of which the receptacles *b* can be rotated by hand for bringing the doors *b*¹ thereof opposite to the doors *a*¹ in the box or case *a*, or for other purposes. G¹ G¹ are catches pivoted at G² to the brackets F³. The catches G¹ are adapted to enter notches in the hand-wheels G, and thus lock the receptacles *b* firmly in such a position that easy access can be had to the doors *b*¹ through the apertures or doors *a*¹ in the box or case *a*. For periodically and automatically reversing the motion of the receptacles *b*, I employ the device hereinafter described, that is to say:—The shaft C carrying the fast or driving pulley B and the loose pulley B¹ is supported at one extremity in a bearing C¹ in the standard C² and is arranged to pivot upon studs C³. The other extremity of the said shaft C is supported in a suitable bearing in a slide piece or block H arranged to slide laterally in a bracket I firmly attached to the frame A. J is a toothed wheel arranged to turn freely upon a stud J¹ fixed to the frame A. The toothed wheel J gears with the toothed wheels D. The said toothed wheel J is formed with a recess J² preferably provided with annular grooves or projections J³. K is a friction wheel also provided with teeth or projections K¹ and firmly secured by means of a key or otherwise

upon the shaft C. K^2 is another friction wheel similar to the friction wheel K and geared therewith so that it will be rotated thereby. The friction wheel K^2 is carried upon a stud K^3 secured to the block H. I prefer to pass the said stud K^3 through an elongated hole or slot H^1 in the said block H and to provide a setting-up screw H^2 by means of which the said stud K^3 and therefore the friction wheel K^2 can be moved towards the friction-wheel K so as to cause the said friction wheel K^2 to bear sufficiently against the latter. L is a cam which bears against rollers M carried by brackets M^1 attached in a suitable manner to the frame A. The cam L is arranged to turn freely upon the shaft C. N is a toothed wheel firmly secured to or formed in one with the said cam L. The toothed wheel N gears with a pinion O carried upon a spindle O^1 fixed to an extension H^3 firmly attached to or forming part of the slide piece or block H or by a suitable bracket firmly attached thereto. P is a mitre wheel or bevel wheel either formed in one with or firmly attached to the pinion O. The mitre wheel or bevel wheel P gears with another mitre wheel or bevel wheel P^1 either formed in one with or firmly secured to a worm wheel Q. The said mitre wheel or bevel wheel P^1 and worm wheel Q are supported upon a spindle R

267 in such a manner as to be capable of rotating freely thereon. The spindle R is supported in a bracket or extension H^4 firmly attached to or forming part of the bracket H^3 . S is a worm firmly attached to the shaft C and gearing with the worm wheel Q. In this manner when the shaft C is rotated rotary motion is also imparted to the cam L through the worm S worm wheel Q and gearing P^1 P O and N. The extremity of the said shaft C is slightly moved by the said cam L alternately to the right and to the left so as to cause either the friction wheel K^2 or the friction wheel K to bear against the annular grooves or projections provided in the recess J^2 in the toothed wheel J and therefore to rotate the said wheel J either in one or the other direction, thus reversing the movement of the revolving receptacles *b*. This periodical reversion may be performed at longer or shorter intervals by altering the pitch of the worm S and worm wheel Q, or the operating surface of the cam L.

T (Fig. 2) is a wringer the driving shaft T^1 of which is extended and is supported in a suitable bearing in an extension I^1 of the bracket I. T^2 is a pulley keyed or otherwise secured upon the extremity of the shaft T^1 . Motion is preferably imparted to the wringer T by means of a belt from an extension B^2 upon the boss of the loose pulley B^1 . By means of this arrangement the said wringer T is not operated until the rotating receptacles *b* are stopped and the driving belt passed from the fast or driving pulley B onto the loose pulley B^1 . This arrangement is advantageous as the wringer T is not usually required whilst the revolving receptacles *b* are in motion.

To reverse the motion of the wringer T for convenience of passing through it the articles from one or other of the revolving receptacles *b* I employ a lever T^3 pivoted loosely upon the spindle T^1 . U , U^1 , U^2 are toothed wheels carried upon suitable studs provided upon the said lever so as to be free to rotate thereon. The toothed wheels

U and U¹ gear with another toothed wheel V keyed or otherwise secured upon the shaft T¹. By raising or lowering the long arm of the lever T³ either the toothed wheel U or the toothed wheel U² can be caused to gear with a toothed wheel W keyed or otherwise secured to the spindle or gudgeon of one of the rollers of the said wringer T thereby communicating motion thereto from the shaft T¹ either through toothed wheels V U and W or through the toothed wheels V U¹ U² and W and rotating the said wringer in one or the other direction. T⁴ is a quadrant for securing the lever T³ in either position.

Figure 4 illustrates a modification of my improved automatic reversing gear wherein I dispense with the external teeth upon the toothed wheel J and provide a small pinion X formed with or firmly secured to the said toothed wheel J. The pinion X is geared with the toothed wheels D and imparts motion thereto when the toothed wheel J is rotated as hereinbefore described. By this arrangement I obviate loss of power and am thus enabled to drive the machine with less expenditure of energy. I provide moreover suitable toothed wheels K¹ for imparting motion from the shaft C to the friction wheel K², instead of operatively the latter by friction between the friction wheels K and K² as in the arrangement hereinbefore described. The levers F¹ are in this instance pivoted at F² to the extensions provided upon the bracket I.

Figures 5, 6 and 7 show an improved rotating washing chamber or receptacle which I prefer to employ in the chambers in the box or case a. Y is a basket or cage firmly secured to the side or door b¹ of the receptacle b which is constructed so as to be readily removable therefrom. Y¹, Y¹ are holes or perforations and Y² are ribs or corrugations. Z, Z are eye bolts provided with wing nuts or fly nuts Z¹. The eye bolts Z are adapted to fit into slots Z² provided in the said removable side b² so as to secure the latter and the basket or cage Y attached thereto firmly in position.

Instead of the above described basket or cage I may employ receptacles having perforated diaphragms similar to those described in the specification of my aforesaid Letters Patent No. 5506.

By making my washing machine duplex, that is to say, with two washing chambers in one box or case, I am enabled to wash or cleanse the articles contained in one chamber and then pass them into the second chamber with or without passing them through the wringer. The clothes or other articles are thus subjected to two

washings without the necessity of removing them from one machine to another at a greater or less distance therefrom, thereby saving labour and obviating or diminishing the risk of the said clothes or other articles being soiled or damaged during the said removal.

Although I have hereinbefore described my said invention as applied to a washing machine with revolving receptacles having collapsible sides placed inside chambers or compartments in an outer box or case it is obvious that I can employ any other suitable form of receptacles or dispense with the said box or case and provide suit-

able receptacles arranged to be revolved or rotated in bearings in a suitable frame by means of one set of gearing.

It is obvious, moreover, that I can somewhat further modify my said automatic reversing gear without departing from the nature of my said invention.

Having now particularly described and ascertained the nature of my said invention, and in what manner the same is to be performed I wish it understood that I claim:—

First. A washing machine comprising a box or case divided into compartments in which are arranged rotating washing-chambers or receptacles operated by means a single driving shaft, substantially as, and for the purposes, set forth.

Second. The combination of a suitable box or case divided into compartments, rotating washing-chambers or receptacles arranged within the said box or case and suitable gearing for automatically reversing the motion of the said chambers or receptacles at regular intervals, substantially as described.

Third. The improved reversing gear constructed substantially as described with reference to Figures 1, 2 and 3 or to Figure 4 of the drawings and operating as, and for the purpose, above specified.

Fourth. The improved washing-chamber or receptacle constructed substantially as described with reference to Figures 5, 6 and 7 of the accompanying drawings for the purpose specified.

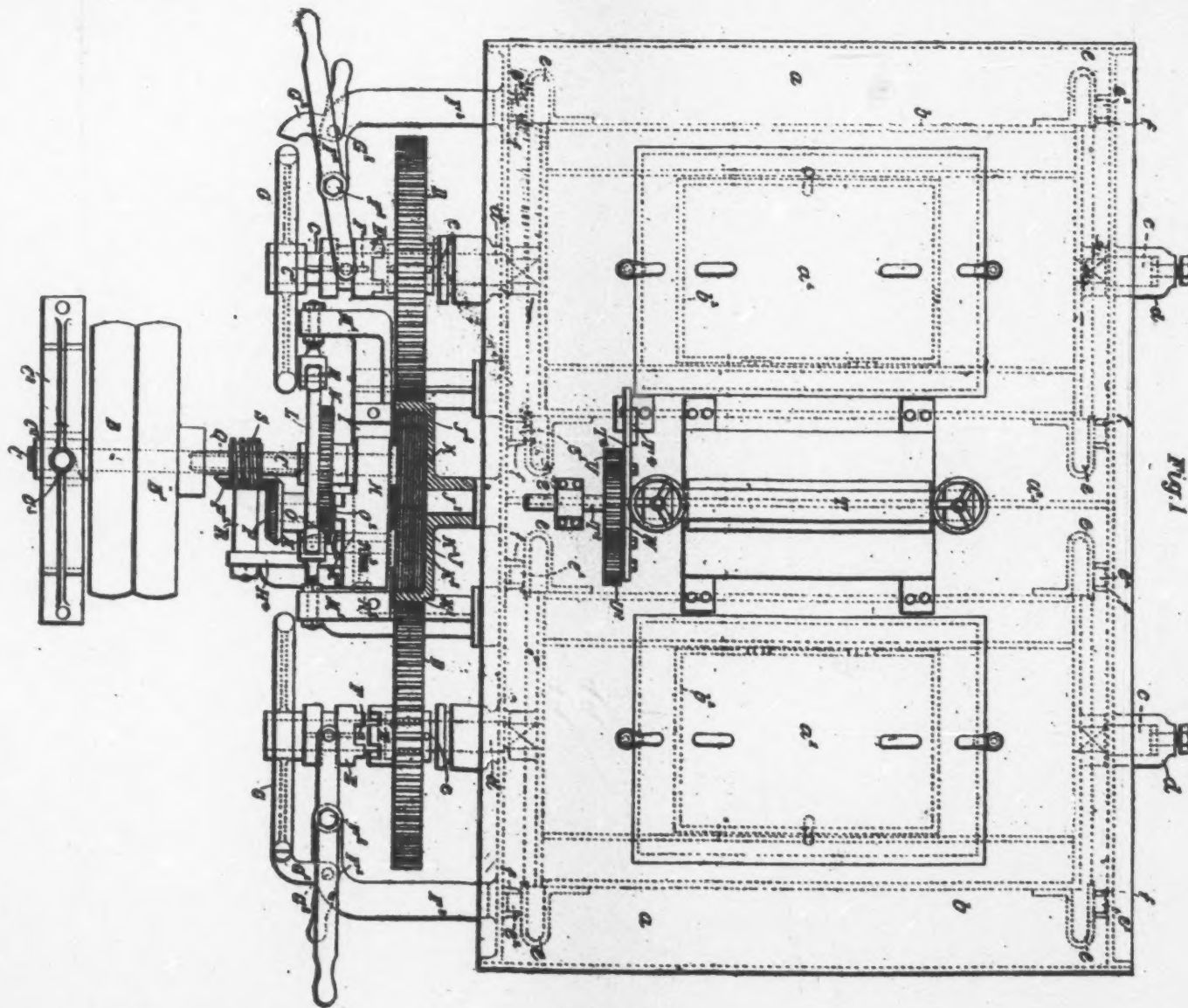
Fifth. The improved washing-machine constructed substantially as described with reference to Figures 1, 2 and 3 of the accompanying drawings and operating as above specified.

Dated this 19th day of October 1889.

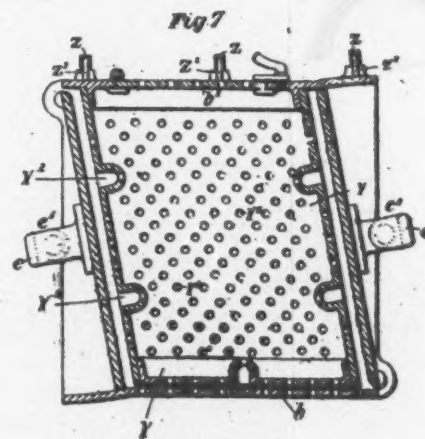
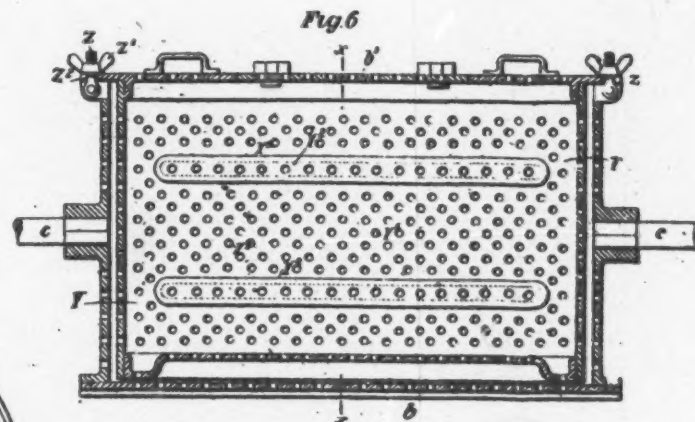
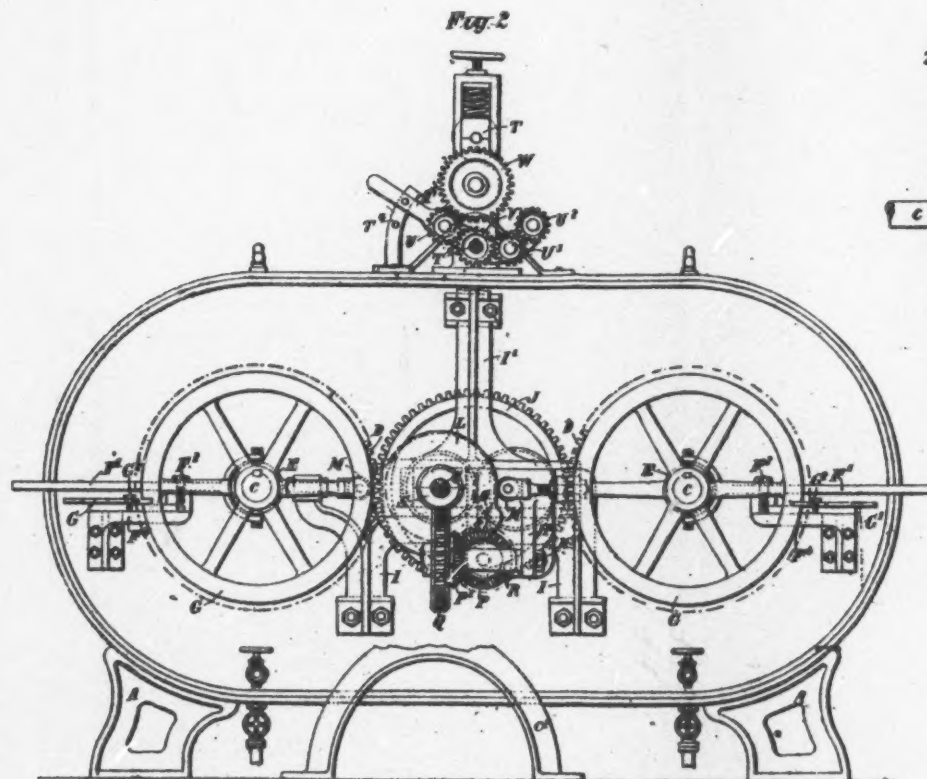
WILLIAM SHEDLOCK.

HASELTINE, LAKE & CO.,
45, Southampton Buildings, London,
Agents for the Applicant.

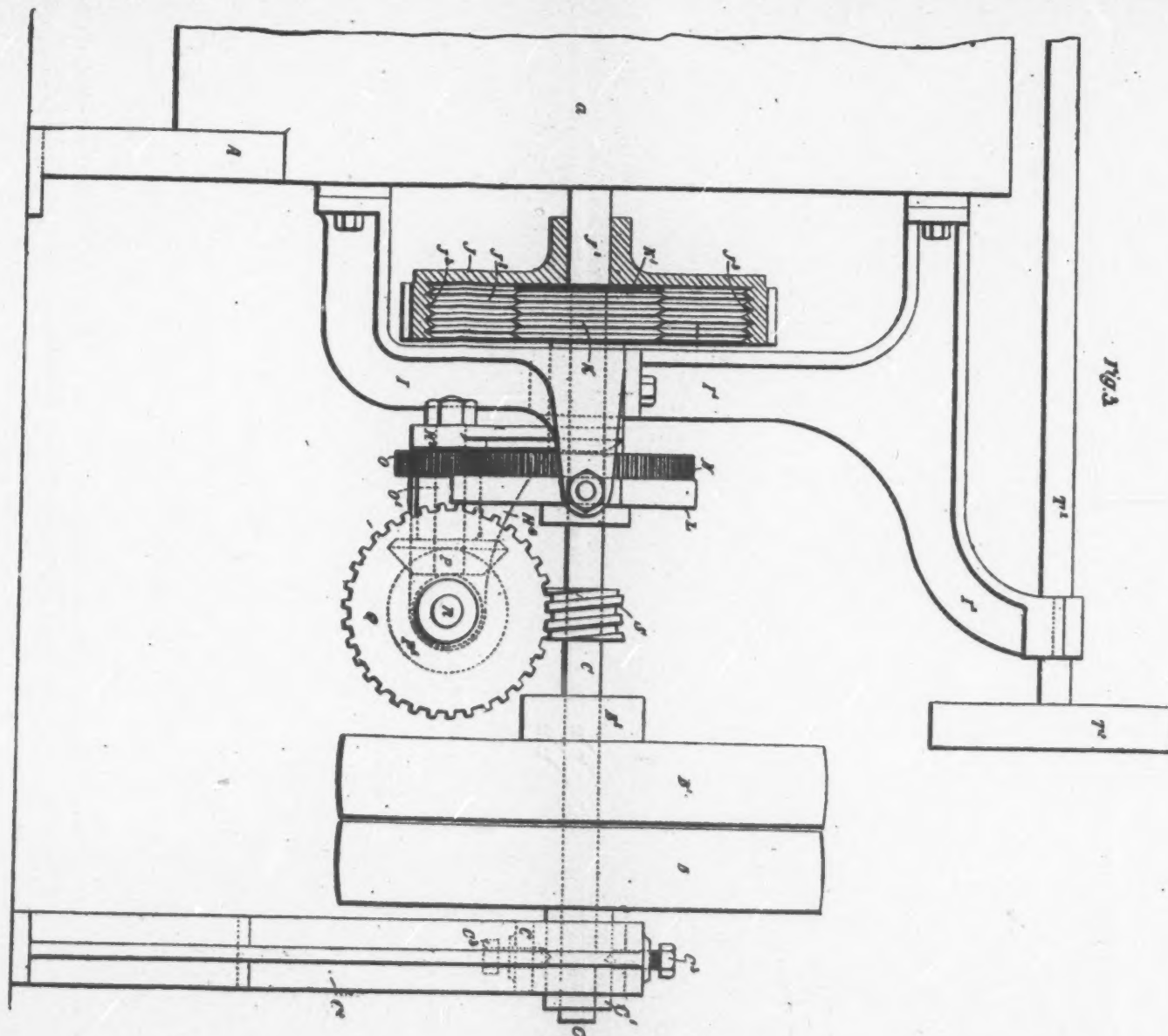
(Here follow drawings marked pages 269-272.)



[This Drawing is a reproduction of the Original on a reduced scale.]



[This Drawing is a reproduction of the Original on a reduced scale.]



[This Drawing is a reproduction of the Original on a reduced scale.]

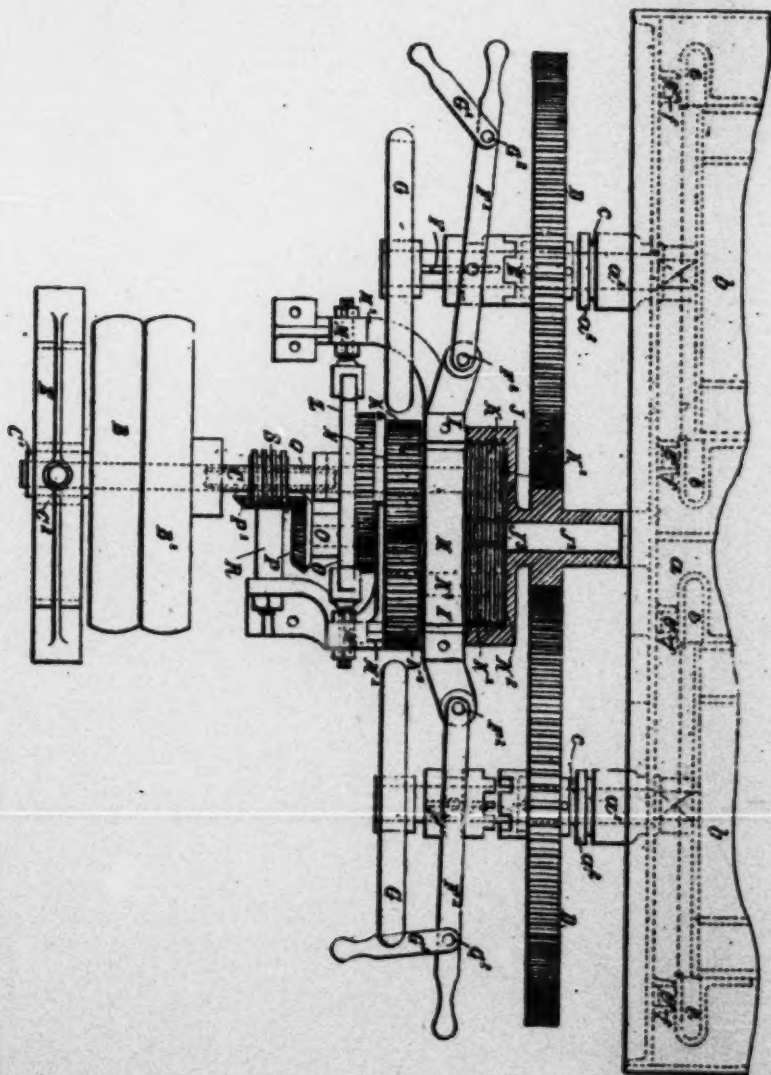
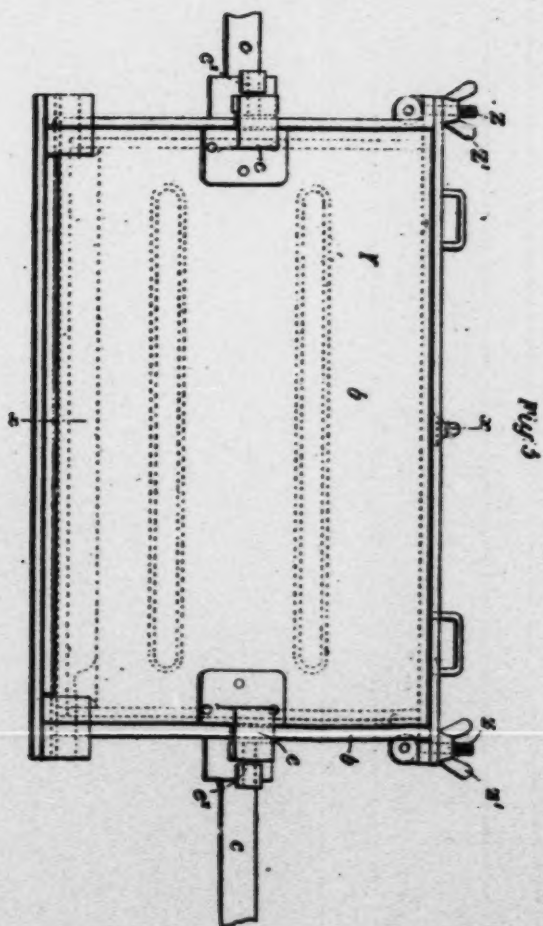


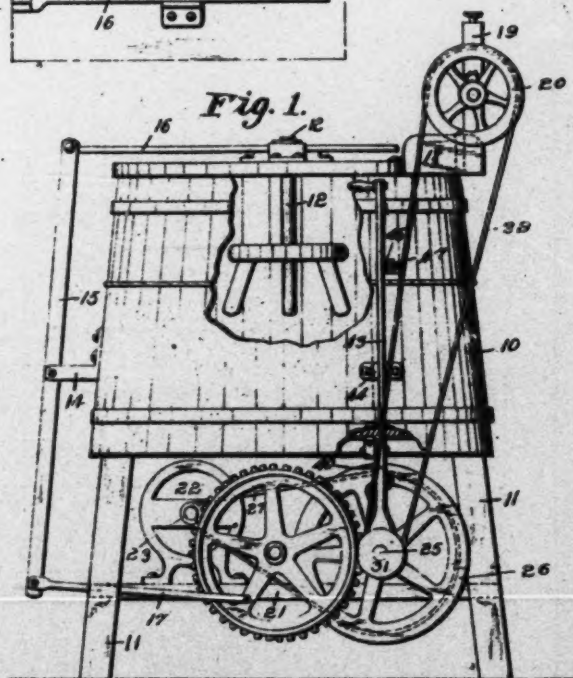
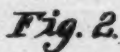
Fig. 8.

[This Drawing is a reproduction of the Original on a reduced scale.]



921,195.

~~SECRET-SECRET 1.~~



Inventor.

J.B. Woodruff.
by Curig T. Lan atty



O. B. WOODROW.
DRIVING MECHANISM.
APPLICATION FILED MAR. 13, 1908.

921,195.

Patented May 11, 1909.

3 SHEETS—SHEET 2.

Fig. 4.

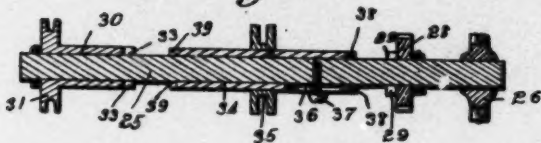


Fig. 5.

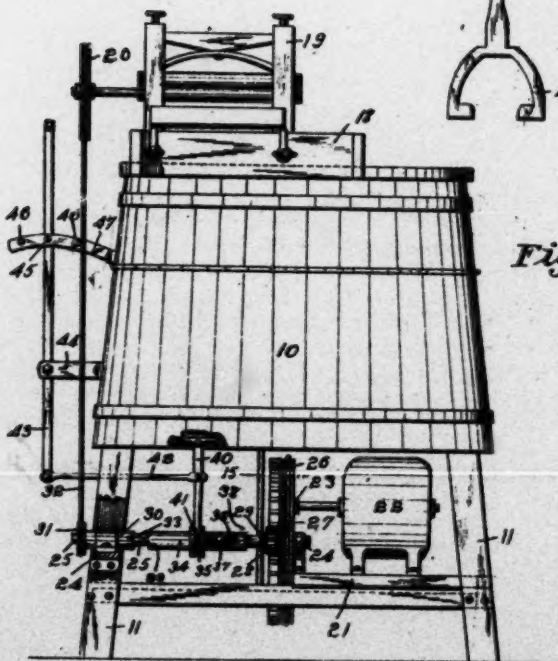


Fig. 3.

Witnesses.

F. C. Dahlberg
A. S. Hague

Inventor.

O. B. Woodrow.
by *August L. L. L.* atty.

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United States Patent Office.

Oliver B. Woodrow, of Newton, Iowa.

Driving Mechanism.

No. 921,195.

Patented May 11, 1909.

Specification of Letters Patent.

Application Filed March 13, 1908. Serial No. 420,954.

To all whom it may concern :

Be it known that I, Oliver B. Woodrow, a citizen of the United States, residing at Newton, in the county of Jasper and State of Iowa, have invented a new and useful Driving Mechanism, of which the following is a specification.

The object of my invention is to provide means of simple, durable and inexpensive construction, permanently connected to the frame of a washing machine, whereby all of the operating mechanism, including an electric motor or other suitable power device, may be mounted beneath the body of a washing machine in such a manner as to balance the weight of the washing machine, and to be contained within the same amount of floor space as the washing machine of itself would occupy, and further, to provide operating means of this kind whereby the operator may readily and easily control the movement of either the washing machine or wringer, so that either may be stopped or started instantly, whenever desired, and so that either the wringer or washing machine may be operated or both thrown out of gear, but only one at a time may be operated.

My invention consists in the construction, arrangement and combination of the various parts of the device, whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claims and illustrated in the accompanying drawings, in which—

(Here follow drawings marked pages 273-276.)

Figure 1 shows a side elevation of the complete device embodying my invention. Fig. 2 shows a detail plan view illustrating the means for operating the agitator shaft. Fig. 3 shows a rear end elevation of the entire device embodying my invention. Fig. 4 shows an enlarged detail sectional view of the clutch device, and—Fig. 5 shows a detail view of the lower end of the lever for operating the movable sleeve of the clutch device.

Referring to the accompanying drawings, I have used the reference numeral 10 to indicate the washing machine body supported upon the legs 11. Mounted in the cover of the body is an agitator shaft 12, provided with a pinion 13.

At the front of the washing machine body is a bracket 14, to which an operating lever 15 is fulcrumed. This operating lever has pivoted to its top a rack bar 16 in mesh with the pinion 13, and pivoted to the lower end of the lever 15 is a pitman 17.

Mounted at the rear of the washing machine body on the cover thereof, is a wringer support 18, to which a wringer 19 of ordinary construction is attached. This wringer is provided with a grooved pulley 20 attached to one of the roller shafts.

Mounted beneath the body 10, and between the supporting legs 11, is a platform 21, and supported upon this platform is an electric motor 22, or other suitable power device. Fixed to the shaft of the motor 22 is a small pulley 23.

Mounted in bearings 24 below the body 10, is a shaft 25 having fixed to one end thereof a large pulley 26, which pulley is connected by means of the belt 27 with the small pulley 23 on the motor. Rotatably mounted upon the shaft 25 is a small pinion 28 having a ratchet clutch member 29 connected therewith. Fixed to the other end of the shaft 25 is a sleeve 30 having thereon a small pulley 31 connected by a belt 32 with the pulley 20. Said sleeve is also provided with a ratchet clutch member 33. Slidingly mounted upon the shaft 25 between said clutch members 29 and 33, is a sleeve 34 having an annular groove 35 formed thereon. This sleeve is provided with a longitudinal slot 36, and a screw 37 is passed through said slot and seated in the shaft 25, to thereby permit the sleeve to move longitudinally upon the shaft, and to prevent its rotation thereon. On one end of the sleeve 34 is a ratchet clutch member 38, to co-act with the clutch member 29, and on its other end is a ratchet clutch member 39 to co-act with the clutch member 33.

Mounted beneath the body 10 is a lever 40 having a fork 41 at its lower end to enter the groove 35. This lever has a pitman 42 pivoted to its entral portion, the outer end of the pitman being pivoted to a lever 43, which lever is fulcrumed to the bracket 44, and is provided at its upper end with a lug 45 designed to enter the notches 46 in the curved bracket 47, said lug being yieldingly held in one of the notches 46 in which it may be placed, by the resiliency of the lever 43. The arrangement of these parts is such that when the lever 43 is in the position shown in Fig. 3, then the

278 sleeve 34 is held midway between the ratchet members 29 and 33, and when the lever 43 is moved to one side of its central position, the clutches 38 and 29 will engage, and when moved to its other limit, the clutches 39 and 33 will engage.

Mounted beneath the machine body is a large pinion 48 having the pitman 17 pivoted to it, and arranged in mesh with the small pinion 28, so that when said small pinion is rotated, the rack bar 16 will be reciprocated and an alternating rotary motion will be imparted to the agitator shaft.

In practical operation, and assuming that the motor is running, and assuming further that the sleeve 34 is in its central position, then neither the agitator nor the wringer are being operated. If it is desired to operate the agitator, then the operator grasps the lever 43 and moves its upper end away from the body 10, thus throwing the clutch members 28 and 29 into engagement. This will cause the small pinion 28 to be rotated with the shaft 25, and thereby operate the large pinion 48, the pitman 17, the lever 15, the rack bar 16, and the pinion 13 on the agitator shaft. If it is desired to stop the movement of the agitator, the lever 43 is returned to its central position, and if it is desired to operate the wringer, the upper end of the lever 43 is moved toward the body 10, thus throwing the clutch members 33 and 39 into engagement.

In a device of this kind, and especially in connection with the operation of a wringer, it is desirable to provide means whereby the operating devices may be instantly stopped. For instance, in regard to the wringer, and in the event that an article of clothing is being run through the wringer, and the article should become wound upon the rollers, or should become entangled with other articles, then if the motion of the wringer was continued, either the article or the wringer might become damaged, and if, in order to stop the wringer it was necessary to stop the motor and all the other machinery, then in many cases this could not be accomplished quickly enough to prevent damage. However, by means of my invention, either the wringer or the agitator may be thrown out of gear instantly, whenever the occasion demands, and on account of the friction which both the wringer and the agitator are subjected to, they will instantly stop whenever the clutch device is moved to position for throwing them out of gear.

Having thus described my invention, what I claim and desire to secure by Letters Patent, is—

1. In a gearing device of the class described, the combination of a frame, supporting legs for the frame, a platform secured to the supporting legs below the frame, a shaft at the top of the frame, a motor mounted on the said platform, an operating device connected with the motor, and with the said shaft for imparting an alternating rotary motion to the shaft, a controlling lever, and means actuated by the controlling lever for throwing the operating device into or out of operative connection with the motor.

2. In a gearing device of the class described, the combination of a frame, supporting legs for the frame, a platform fixed to the sup-

porting legs below the frame, a motor on the platform, a shaft mounted in the top of the frame, a device mounted on top of the frame, an operating device connected with the motor and the said shaft for imparting an alternating rotary motion to the latter, an operating device connected with the motor and with the said device for operating the latter, a controlling lever and means operated by the controlling lever for throwing either of said operating devices into or out of operative connection with the motor.

3. In a gearing device of the class described, the combination of a frame, supporting legs therefor, a platform beneath the frame fixed to the supporting legs, a motor thereon, a rotatable shaft, means for rotating the shaft by power from the motor, a small pinion and a small pulley rotatably mounted on said shaft, and each having a clutch member, a sliding clutch member mounted on the shaft and capable of engaging either of said clutch members, or of standing in position out of engagement with both, a controlling lever for operating said sliding clutch member, a shaft at the top of the frame, means for operating said shaft by power from the small pinion, a device on top of the frame, and means for operating the same by power from the small pulley.

4. In a gearing device of the class described, the combination of a frame, supporting legs therefor, a platform beneath the frame fixed to the supporting legs, a motor thereon, a rotatable shaft, means for rotating the shaft by power from the motor, a small pinion and a small pulley rotatably mounted on said shaft, and each having a clutch member, a sliding clutch member mounted on the shaft and capable of engaging either of said clutch members or of standing in position out of engagement with both, a controlling lever for operating said sliding clutch member, a shaft at the top of the frame, means for operating said shaft by power from the small pinion, a device on top of the frame, means for operating the same by power from the small pulley, and means for supporting the controlling lever in position with the sliding clutch member out of engagement with both of the other clutch members, or in engagement with either.

5. A gearing device of the class described, comprising a frame, supporting legs therefor, a platform secured to the supporting legs below the frame, a motor mounted on said platform, a rotatable shaft mounted beneath the frame, means for operating said shaft from the motor, a small pinion rotatably mounted on the shaft and having a clutch member, a small pulley rotatably mounted on the shaft, and having a clutch member, a sliding clutch member mounted on the shaft and capable of standing in position out of engagement with both of the other clutch members or in engagement with either, a lever fulcrumed to the bottom of the frame for controlling the sliding clutch member, a pitman connected with said lever, a controlling lever fulcrumed to the side of the frame and having a lug near its upper end, a notched bracket fixed to the frame, to be engaged by said lug, a shaft mounted in the top of the frame, a pinion thereon, a rack in engagement with said pinion, a lever fulcrumed to one side of the frame and pivoted to said

rack, a pitman pivoted to the lower end of said lever, a large pinion mounted beneath the frame and in mesh with said small pinion and having said pitman pivoted to it, a device on top of the frame, a pulley on said device and a belt for connecting said pulley with the said small pulley, for the purposes stated.

Des Moines, Iowa, Feb. 28, 1908.

OLIVER B. WOODROW.

Witnesses:

S. F. CHRISTY,
M. E. BENNETT.

281 & 282

Certificate of Clerk.

United States Circuit Court of Appeals for the Seventh Circuit.

I, Edward M. Holloway, Clerk of the United States Circuit Court of Appeals for the Seventh Circuit, do hereby certify that the foregoing printed pages, numbered from 1 to 279, inclusive, contain a true copy of the printed record, filed August 19, 1915, in the case of E. E. Johnson Company vs. Grinnell Washing Machine Company, No. 2285, October Term, 1915, as the same remains upon the files and records of the United States Circuit Court of Appeals, for the Seventh Circuit.

In testimony whereof I hereunto subscribe my name and affix the seal of said United States Circuit Court of Appeals for the Seventh Circuit, at the City of Chicago, this fourteenth day of September, A. D. 1916.

[Seal United States Circuit Court of Appeals, Seventh Circuit.]

EDWARD M. HOLLOWAY,
*Clerk of the United States Court of Appeals
for the Seventh Circuit.*

283 At a regular term of the United States Circuit Court of Appeals for the Seventh Circuit, begun and held in the United States Court Room, in the City of Chicago, in said Seventh Circuit on the sixth day of October, 1914, of the October Term, in the year of our Lord, one thousand nine hundred and fourteen, and of our Independence the one hundred and thirty-ninth year.

And afterwards, to-wit: On the nineteenth day of August, 1915, in the October term last aforesaid, the following further proceedings were had and entered of record, to-wit:—

THURSDAY, August 19, 1915.

Court met pursuant to adjournment and was opened by proclamation of crier.

Present:

Hon. Christion C. Kohlsaat, Circuit Judge, presiding.
Edward M. Holloway, Clerk.
John J. Bradley, Marshal.

2285.

E. E. JOHNSON COMPANY

VE.

GRINNELL WASHING MACHINE COMPANY.

Appeal from the District Court of the United States for the Southern District of Illinois, Northern Division.

Upon application of counsel for appellant, it is now here ordered that the printed transcript of the record in the above entitled cause presented herewith, may be filed by the Clerk of this Court without the supervision by him of the printing of the record, indexing or distributing copies thereof, and that the Clerk of this Court charge no fee for same.

At a regular term of the United States Circuit Court of Appeals for the Seventh Circuit, begun and held in the United States Court Room, in the City of Chicago, in said Seventh Circuit on the fifth day of October, 1915, of the October term, in the year of our Lord, one thousand nine hundred and fifteen, and of our Independence the one hundred and fortieth year.

284 And afterwards, to-wit: On the fifth day of October, 1915, in the October term last aforesaid, the following further proceedings were had and entered of record, to-wit:

TUESDAY, October 5, 1915.

Present:

Hon. Francis E. Baker, Circuit Judge, presiding.
Hon. Christian C. Kohlsaat, Circuit Judge.
Hon. Julian W. Mack, Circuit Judge.
Hon. Samuel Alschuler, Circuit Judge.
Edward M. Holloway, Clerk.
John J. Bradley, Marshal.

Before:

Hon. Francis E. Baker, Circuit Judge.
Hon. Christian C. Kohlsaat, Circuit Judge.
Hon. Samuel Alschuler, Circuit Judge.

2285.

E. E. JOHNSON COMPANY

vs.

GRINNELL WASHING MACHINE COMPANY.

Appeal from the District Court of the United States for the Southern
District of Illinois, Northern Division.

It is ordered by the Court that this cause be, and the same is hereby
set down for hearing on October 19, 1915.

And afterwards, to-wit: On the nineteenth day of October, 1915,
in the October term last aforesaid, the following further proceedings
were had and entered of record, to-wit:

285

TUESDAY, October 19, 1915.

Court met pursuant to adjournment and was opened by proclama-
tion of crier.

Present:

Hon. Christian C. Kohlsaat, Circuit Judge, presiding.
Hon. Julian W. Mack, Circuit Judge.
Hon. Samuel Alschuler, Circuit Judge.
Edward M. Holloway, Clerk.
John J. Bradley, Marshal.

2285.

E. E. JOHNSON COMPANY

vs.

GRINNELL WASHING MACHINE COMPANY.

Appeal from the District Court of the United States for the Southern
District of Illinois, Northern Division.

Now this day come the parties by their counsel and this cause hav-
ing been partly heard on the printed record and briefs of counsel,

and on oral argument by Mr. Clarence E. Mehlhope, counsel for appellant, and by Mr. Ralph Orwig, counsel for appellee, the further hearing is hereby continued until ten o'clock tomorrow morning.

And afterwards, to-wit: On the twentieth day of October, 1915, in the October term last aforesaid, the following further proceedings were had and entered of record to-wit:

286

WEDNESDAY, October 20, 1915.

Court met pursuant to adjournment and was opened by proclamation of crier.

Present:

Hon. Christian C. Kohlsaat, Circuit Judge, presiding.

Hon. Julian W. Mack, Circuit Judge.

Hon. Samuel Alschuler, Circuit Judge.

Edward M. Holloway, Clerk.

John J. Bradley, Marshal.

2285.

E. E. JOHNSON COMPANY

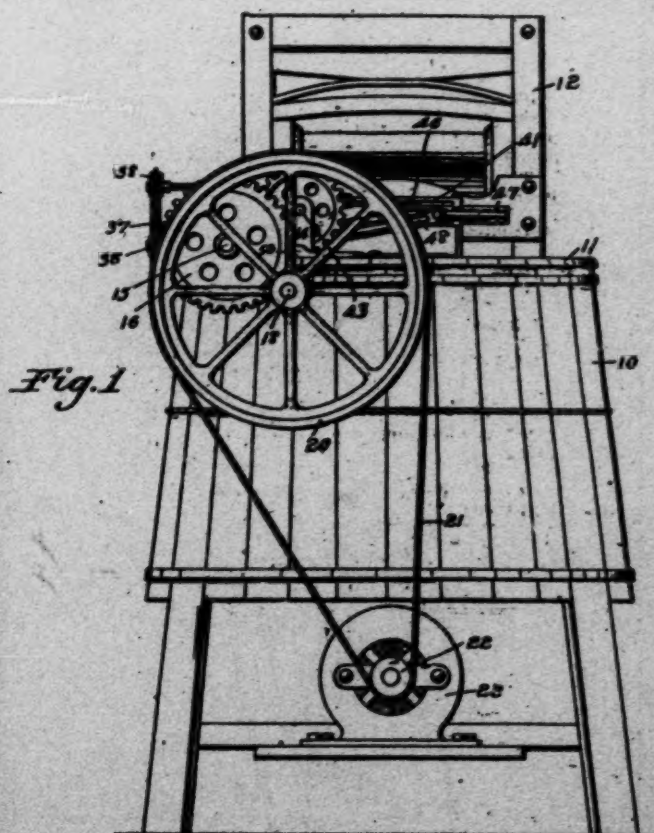
vs.

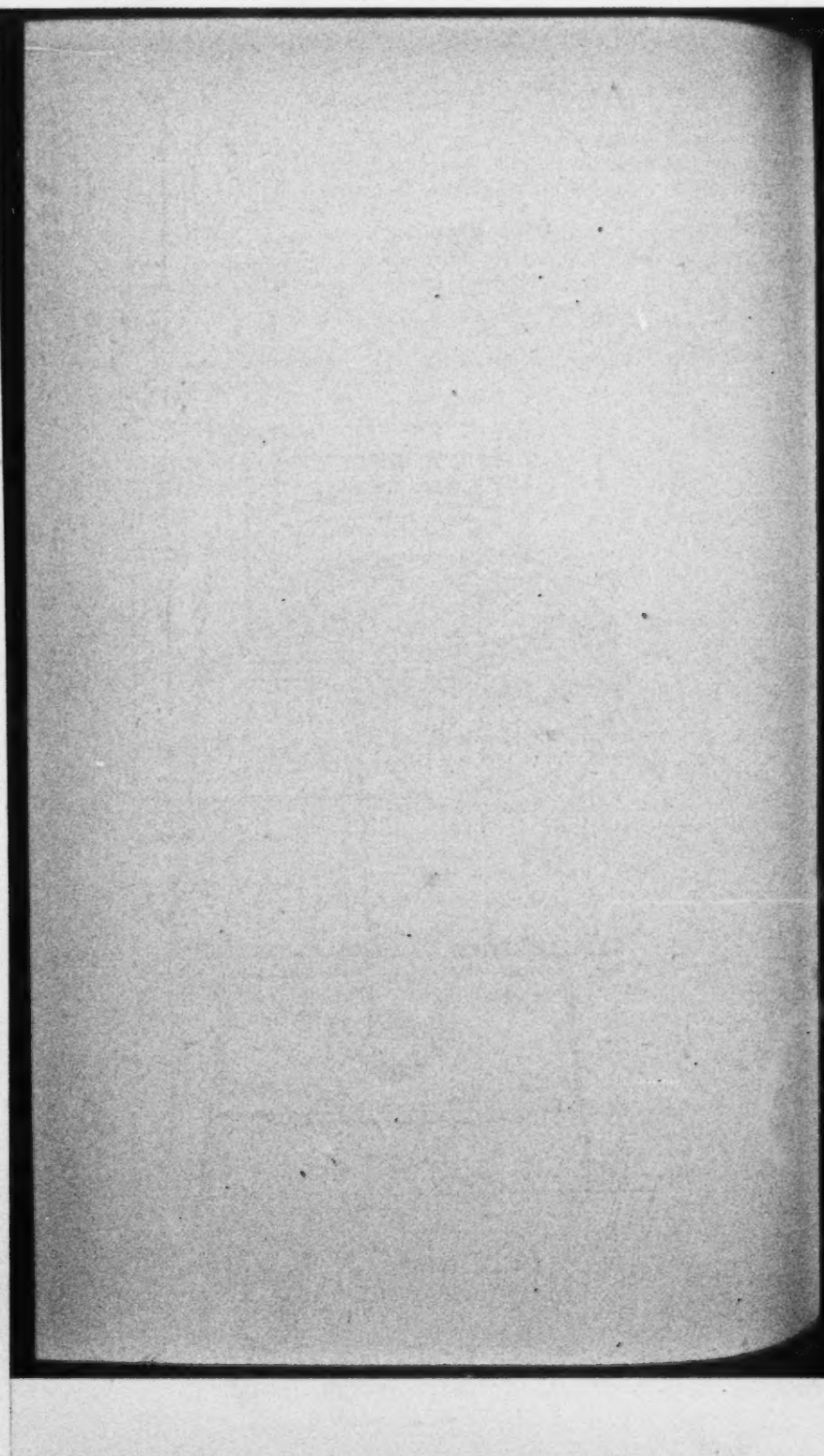
GRINNELL WASHING MACHINE COMPANY.

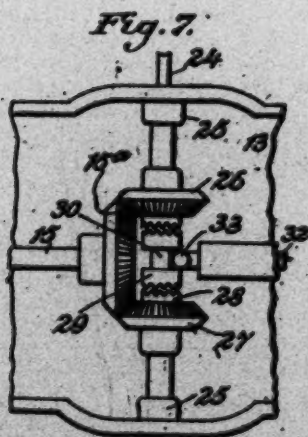
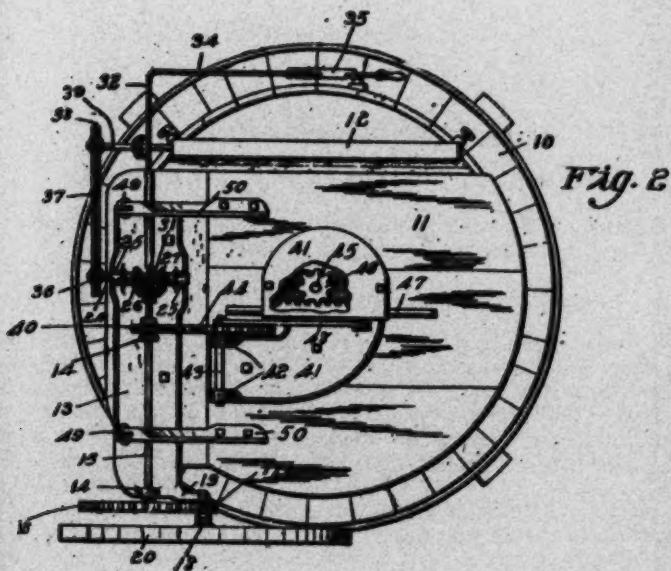
Appeal from the District Court of the United States for the Southern District of Illinois, Northern Division.

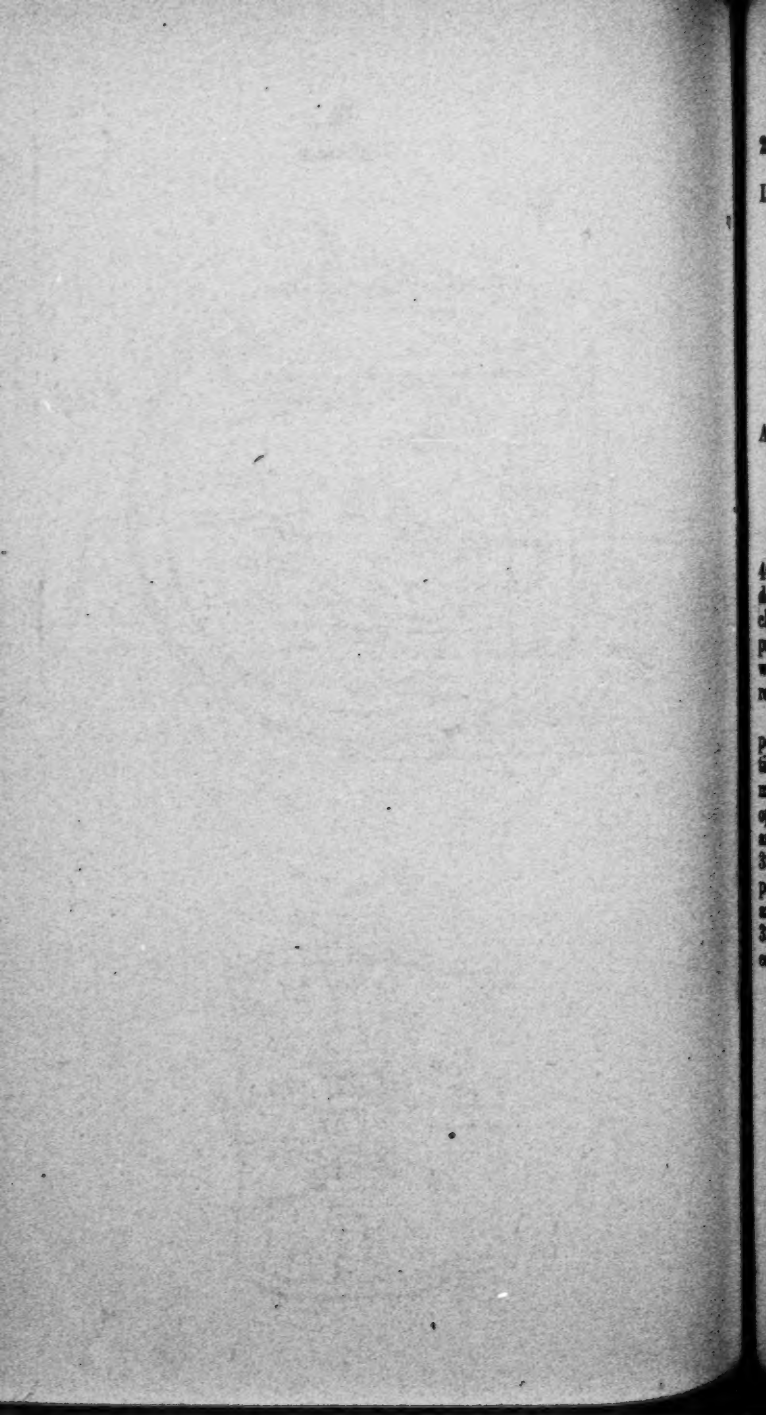
Now again come the parties by their counsel and this cause now comes on to be heard to conclusion on the printed record and briefs of counsel and on oral argument by Mr. Ralph Orwig, counsel for appellee, and by Mr. Taylor E. Brown, counsel for appellant, and the Court having heard the same takes this matter under advisement.

And afterwards, to-wit: On the fourth day of January, 1916, in the October term last aforesaid, there was filed in the office of the Clerk of this Court, the Opinion of the Court in the words and figures following, to-wit:









Opinion.

In the United States Circuit Court of Appeals for the Seventh Circuit.

October Term and Session, 1915.

2285.

E. E. JOHNSON COMPANY, Appellant,

vs.

GRINNELL WASHING MACHINE Co., Appellee.

Appeal from the District Court of the United States for the Southern District of Illinois, Northern Division.

Before Kohlsaat, Mack, and Alschuler, Circuit Judges.

The District Court found claims 5, 6, 7 and 8 of patent No. 950,402, granted February 22, 1910, to W. F. Phillips for a gearing device especially adapted to the operation by power of washing machines and wringers, to be valid and infringed by appellant. In the proceedings, claim 6 was conceded to best set out the invention, and will be herein taken as typical of the subject-matter of this suit. It reads as follows, viz:

A gearing device of the class described, comprising a support, a power shaft mounted on the support, means for imparting a continuous rotary motion to the power shaft, an upright shaft 45 mounted in the support, a driving device for the upright shaft operatively connected with the power shaft and capable of imparting an alternating rotary motion to the upright shaft, a horizontal shaft 39, a driving mechanism for the said shaft 39 connected with the power shaft and capable of imparting a rotary motion to the shaft 39, and a controlling means applied to the driving device for the shaft 39, for reversing the movement thereof and also for operatively disconnecting the shaft 39 from the driving shaft.

Figs. 1, 2 and 7 of the drawings are as follows, viz:

(Here follow drawings marked pages 288 and 289.)

290 Fig. 1 shows a side elevation of the device mounted on a tub. Fig. 2 shows a top plain view thereof, and fig. 7 shows a detail plan of the actuating device of the wringer. The body portion of the washing machine 10 carries a cover 11. A wringer 12 is placed on the body portion. The washer and wringer are not elements of the patent. The greater part of the device of the patent is connected with and supported by the base 13, bolted to the body portion of the washing machine, on which base are the bearings 14 to receive the rotatably mounted power shaft 15. At its outer end shaft 15 carries a gear wheel 16 meshing with small gear 17 on the shaft which carries the fly-wheel. The application of power from the motor 23 through the pulley 22, belt 21 and the fly-wheel 20 will be readily understood. Mounted on the base 13 is a rotatable shaft 24 supported in bearings 25, having rotatably mounted thereon pinions 26 and 27 spaced apart and provided with ratchet clutch members 28 on their adjacent faces. Between pinions 26 and 27 is a hub 29 slidably and non-rotatably mounted on the shaft 24 and having an annular groove 30, and on its outer faces ratchet clutch members or teeth 31, designed to coast with the teeth on the beveled pinions 26 and 27. The clutch member 29, by means of its connection with the lever 34, can be manually manipulated so as to reverse the movement of the wringer cylinders by throwing the clutch cam first into moving contact with the gear wheel 26 and then back to 27, or, when desired, the operator can throw the clutch into an inoperative position by throwing the arm 34 into the center notch provided for controlling the operation of the direction mechanisms. Even when the cam is at its inoperative position, the beveled pinions are in mesh with the beveled pinion 15a which is at the inner end of the power shaft 15 and furnishes power to the wringer device. The device for imparting this power to the wringer shaft 39—the sprocket wheels 36 and 38 and the sprocket chain 37—will be readily understood without further description thereof. The power shaft 15 carries a small gear wheel 40 for operating the washing machine. This part of the claimed patented device is operated by one of the well known methods whereby the stirrer shaft or dolly is given an oscillating motion by means, not here in question, applied to the vertical shaft 45 on the support. The support, or lid, carrying the washing machine, is hinged and may be lifted up so as to release it from contact with the power shaft. In such case the wringer 291 will be operated, if desired, alone. Without its being so out of mesh with the pinion on the power shaft, there is no way of operating the wringer without at the same time operating the washing machine, though, by means of the cam clutch device, the wringer may be at rest when the washing machine is in action. The power shaft is located above the longitudinal central portion of the base 13. The clothes constituting the wash may be removed by lifting the lid carrying the washing device which rests thereon. Then the contents of the tub can be removed manually and fed to the wringer, and back again if desired. There is no operative connection between the clothes in the tub and the wringer.

The defenses set up are invalidity, because of an unpatentable

combination, also want of novelty in view of the prior art, and non-infringement.

The patent was twice sustained by the District Court for the southern district of Iowa and by the eighth Circuit Court of Appeals in *Newton Washing Machine Co. v. Grinnell Washing Machine Co.*, 222 Fed. Rep., 512. The decision of the District Court in this present cause was held to await the decision of the cause in the eighth circuit. Thereafter the order sustaining the patent and decreeing infringement and accounting was entered.

The errors assigned are (1) That the court erred in holding validity and ordering an accounting; (2) that the court erred in not holding the patent invalid because (a) of aggregation, (b) of anticipation, and (c) of non-patentable subject-matter; (3) that the court erred in not so limiting the scope of the patent as to differentiate it from appellant's device, and in not dismissing the bill for want of equity.

KOHLSAAT, *Circuit Judge*, delivered the opinion.

The most important question presented is, Do the facts disclose a combination or a mere aggregation? It is conceded that the washing gear, the wringing gear and the operating gear are all old. Efforts of appellant's counsel to ascertain just what the combination claimed by appellee was, were not entirely satisfactory. Appellee's expert witness was asked, "Is there any co-action whatever between the washing machine as such and the wringing machine as such, or any cooperation between them?" To which he replied, "I think there is. You can use both at the same time. You can be washing one batch of clothes while you are wringing out another batch in the course of the same operation of doing a family washing." In reply to the question, "What new result is performed by this gearing described in the Phillips patent and claimed in the claims in issue?"—the same witness replied, "As nearly as I can recall the prior art, the Phillips patent was the first to disclose a power driven dolly type of machine in which the user could use the machine for washing clothes and wringing them into one tub and out of another as occasion demanded, in the course of doing say, a family washing." When asked by appellant's counsel, "Suppose you have one blanket to wash—you put it in the washing machine and wash it. Then that day or the next you wring it. Will you state in what way there is any coöperation between the action of these two machines, speaking, as I have been, of the Phillips machine?" Appellee's expert, after some colloquy, replied, "There is the structural coöperation or coaction that I explained before; inasmuch as you have one common support for them and a common power shaft and a common motor." When further asked as to whether there is not the same coaction between machines driven by a line shaft on the machine shop bench as there is between the washing machine and the wringer, the same expert again, after colloquy, replied: "Considered purely as a drive-shaft and the first element of the train of gearing, yes, but when you come to consider the action on the ultimate elements of the gears, that would be very different.

In one case you have the final action on the clothing. In the other case, if I recall your illustration correctly, the final action is on the wood that is being put in shape." The same witness conceded that to drive one shaft from another shaft and to drive a reverse mechanism, so that a shaft may be driven in either direction or stop it, was old. When asked:

"The sum and substance of your position with regard to the claims in issue here would then appear to be this,—and please state yes or no,—whether I have correctly stated your position; if one take a dolly washing machine of the generally well known type that has been on the market and was on the market long prior to Phillips— if he placed on the tub of that washing machine a wringer in any of the usual places where a wringer is placed most conveniently, if

293 he takes any kind of familiar mechanism for operating that dolly, all well known prior to Phillips, if he provides means for driving his wringer by power, with a reverse mechanism so the wringer may be driven in either direction, and couples the wringer drive mechanism, no matter what kind it may be, provided it includes a reverse mechanism, and the dolly driving mechanism, with a common drive shaft, he will infringe the claims involved in this suit?"

this witness replied:

"I think your statement is a little bit broad in some particulars. As far as it goes, it is probably correct, but I would like to add that one claim; for instance, the sixth, provides that your reversing gearing must be of such a character that the controlling mechanism will allow the wringer rolls to be at rest in spite of the fact that the power shaft is running. Possibly your statement is rather broad with reference to claim 7, for instance, because I do not think you included the limitation of 'a hand lever for adjusting said controlling means' in your statement. Then, too, you omitted from your statement the limitation as to there being 'a prime mover carried by the support for imparting a continuous rotary motion to the power shaft.'

"Furthermore, as I understood your statement, you did not include any limitations as to the two trains of gearing leading from the wringer rolls and the dolly shaft to the common drive shaft, being properly designed on the one hand to rotate the wringer rolls at a practical speed, and on the other hand, being properly designed to swing the dolly shaft through the proper angle and at a proper speed.

"It seems to me that with the additions I have made by way of my answer, that the statement would be correct, but as it stood in your question, it is decidedly too broad."

In his brief, page 15, appellee's counsel say:

"He further realized that in order to make his machine of the greatest possible value to the housewife, he must greatly reduce the time required for an ordinary family washing by contriving a structure that would both wash and wring at the same time, not, of course, on the same garment, but upon different batches of the same washing."

At page 23 it is said:

294 "Applying this well settled rule to the instant case, it is only necessary for the court to find that the Phillips washing machine accomplishes the old result, i. e., rubbing and squeezing the clothes, in a more convenient, facile and economical manner than was capable by the use of any prior art device."

Speaking of a so-called Shedlock device, on page 64 of the brief, the same counsel say:

"* * * but he [Shedlock] never had any notion of providing a unitary gearing to do all of the washing," etc.

Again, at page 73 of the brief:

"Clearly then, the reason why this Shedlock device does not belong to the same class of inventions as the Phillips device and the reason why it cannot be seriously considered as being a complete anticipation of the Phillips device, is that Shedlock never even considered the problem of providing a single unitary washing machine device that was capable of doing all of the work incident to a washing. He only contemplated doing the rubbing part of the washing process and contented himself with a mechanism for that purpose."

Again, at page 101 of their brief, appellee's counsel say:

"Not a single prior art machine for doing the work of a family washing by power has remained on the market since the appearance of the Phillips machine."

The only reference to the point now under consideration, contained in the said opinion of the eighth Circuit Court of Appeals, reads as follows:

"There is no new element in the combination. Therefore, in order to be patentable, the combined action must produce some new result, or an old result in a more efficient and economical manner. The new result in this instance is the washing and wringing of clothes at the same time in a safe and convenient way. This does not mean that the garment is washed and immediately thereafter passed through the wringer. It means that, while some garments are going through the wringer, other garments are being washed and that the two operations go on simultaneously. The wringer is made subject to perfect control by a lever easily and safely manipulated by the operator. The device possesses elements of utility, novelty and invention. The washing machine and wringer are, by the gearing device, made to act jointly and a new and useful result is produced. The device is therefore patentable."

295 Thus we have assigned as grounds for holding the device to be a valid combination, first, the structural coöperation based upon the facts of a common support, a common power shaft and a common motor; and, second, a new result or an old result attained in a more efficient and economical manner, viz., (a) doing a family washing, (b) the wringer and washing device are made to act jointly, i. e., to operate at the same time, when desired.

There is no pretense that the operation of the one affects that of the other. The operator must stop the washing machine by lifting up the tub-lid before the clothes of that washing can be inserted in the wringer. The tub mechanism does not feed to the wringer. Its

ultimate mission is ended when the lid is lifted. The work of feeding the wringer is exactly the same as it would be were the wringer located on some other support equally convenient, although driven by some independent source of power. The two machines severally produce the identical result in the alleged combination which they produce when used independently. There is no relative motion of the two which contributes to or constitutes a new result. As before stated, the actuating mechanism is old and produces no new result. The fact that the two devices have the same support does not tend to show combinations. The earth is the common support of all supported things. That fact suggests no thought of relation. Nor do we think that doing the family washing can be claimed as an improved result. Else one might add to the device of the patent an old dry-kiln, ironing board and heated flat-iron and have a patented family laundry. The only advantage obtained is one of convenience. The two machines could both be operated on the same support by different actuating means attached to the same tub, running at the same time and requiring no more regulating and protecting features than those of the patent. We do not find one element of coaction or coöperation between the washer and the wringer, or one patentable or improved result from their association on the tub. The action of the wash woman in taking the clothes from the tub and feeding them to the wringer results in nothing new. No unitary result is produced.

In the so-called capstan case, *Morris v. McMillin*, 112 U. S. 244, it was held that no invention was involved in merely operating by steam what was theretofore operated by other agencies. So that there is no more invention in the patent in suit than there would be were each machine operated by hand. What constitutes a

296 patentable combination has frequently been before the courts. Mr. Justice Curtis, in *Forbush v. Cook*, 2 Fisher 669 (1859) says, "To make a valid claim for a combination, it is not necessary that the several elementary parts of the combination should act simultaneously. If those elementary parts are so arranged that the successive action of each contributes to produce some one practical result, which result when attained is the product of the simultaneous or successive action of all the elementary parts, viewed as one entire whole, a valid claim for thus combining those elementary parts may be made."

In *San Francisco Bridge Co. v. Keating*, 68 Fed. Rep., 353, the Circuit Court of Appeals for the ninth circuit approved an instruction which reads: "Invention is that which brings out of the realms of the mind something that never existed before. It may consist in the combination of old elements, the invention being in the combination. To make it so, there must be a joint action or operation of the elements, i. e., the elements must coöperate or act jointly to produce the result or object of the combination, or else the assembled elements is [constitute] a mere aggregation, and is not patentable. It is not necessary, however, that their action should be simultaneous. They may be successive."

The Supreme Court, in *Burt v. Evory*, 133 U. S. 349, says it is not

invention to combine old devices into a new machine or manufacture without producing any new mode of operation. To the same effect are *Florsheim v. Schilling*, 137 U. S. 77; *Morgan Envelope Co. v. Albany Paper Co.*, 40 Fed. Rep. 582; and *Mahon v. McGuire Mfg. Co.*, 51 Fed. Rep. 684.

The argument supporting a combination in the present case is fully met by the Supreme Court in the so-called lead pencil case, *Reckendorfer v. Faber*, 92 U. S. 347. The element of convenience, here so much asserted, was in that case given no consideration. The Circuit Court of Appeals for the second circuit, in *American Chocolate Machine Co. v. Helm Steler Co.*, 142 Fed. Rep. 978, 980, held that "The distinction between a combination and an aggregation lies in the presence or absence of mutuality of action. To constitute a combination it is essential that there should be some joint operation performed by its elements, producing a result due to their joint and coöperating action."

There has been some disposition shown by the courts to soften the rule laid down by Justice Matthews in *Pickering v. McCullough*, 104 U. S. 310. It is now conceded that the opinion taken as a whole did not justify the construction at first placed upon it. Fairly read, its true meaning is well stated by Mr. Merwin in his book entitled "Patentability of Inventions", as follows:

"It may be gathered from this case that in a patentable combination there must be a new inter-reaction of some sort between the several elements. * * *

"It is not sufficient that one element is ineffective without the others—that its function is useless except in combination with other functions, but the function of one must be modified in some way by the function of another, so that the function of one element is not the same in combination that it was in place whence it was taken; a peculiar function must be developed in the combination. This need not be true of every element in the combination, but it must be true of some one element, or of several elements, and the virtue of the combination must inhere in this peculiarity of function developed by it."

The opinion was cited in *Palmer v. Corning*, 156 U. S. 343, and in many other cases.

In *Spear Stove and Heating Co. v. Kelsey Heating Co.*, 158 Fed. Rep. 622 (C. C. A. 3rd Cir.), it was held that where the elements relied on merely brought to the alleged combination their own several functions, the patent was not valid. The assembly of a damper in the middle flue of a three-flue stove and a portable base plan did not involve invention. *Bussey v. Excelsior Mfg. Co.*, 110 U. S. 131. Merely bringing of the devices into juxtaposition where each could work out its own result was held not to be invention. *Hailes v. Van Wormer*, 20 Wall. 353; *Palmer v. Corning*, supra; so also, *Heald v. Rice*, 104 U. S. 734; *Hendy v. Iron Works*, 127 U. S. 370; *McCarthy v. Lehigh Valley R. R. Co.*, 160 U. S. 110; *Union Edge Setter Co. v. Keith*, 139 U. S. 530, 539.

In *Thatcher Heating Co. v. Burtis*, 121 U. S., 286, it is said: "There

is no specific quality of the result [of the association of the elements] which cannot be definitely assigned to the independent action of a single element. There is therefore no patentable novelty in the aggregation of the several elements, considered in itself." To the same effect are *Fond du Lac County v. May*, 137 U. S. 395; *Brinkerhoff v. Aloe*, 146 U. S. 515; *Double Pointed Tack Co. v. Two Rivers Mfg. Co.*, 109 U. S. 117; *Wright v. Yuengling*, 155 U. S. 47; *Mossler Safe Co. v. Mossler*, 127 U. S. 354; *Office Specialty Mfg. Co. v. Fenton Metallic Mfg. Co.*, 174 U. S. 492, 498; *Warner Instrument Co. v. Stewart & Clark Mfg. Co.*, 185 Fed. Rep. 507; *Alexander v. Demoulin Bros. & Co.*, 199 Fed. Rep. 145. This court has given this question careful consideration in *Railroad Supply Co. v. Hart Steel Co.*, 222 Fed. Rep. 261, where the defense of aggregation was overruled.

"Unless the combination accomplishes some new result, the mere multiplicity of elements does not make it patentable. So long as each element performs some old and well known function, the result is not a patentable combination but an aggregation of elements," says the court in *Richards v. Chase Elevator Co.*, 158 U. S. 299.

The presumption of validity growing out of the grant is strongly relied upon by appellee to sustain the patent. In *Palmer v. Corning*, supra, the court say "There is no doubt that in this, as in all similar cases, the letters patent are prima facie evidence that the device was patentable; still we are always required, with this presumption in mind, to examine the question of invention vel. non upon its merits in each particular case." In the present case we have no hesitancy in holding that the presumption of validity has been overcome.

While we have great respect for the opinion of the eighth Circuit Court of Appeals, the decision of that court herein does not convince us that the device of the patent constitutes a valid combination. Had this phase of the case been as thoroughly presented to the District Court as it has been here, we think the decision must have been otherwise.

In view of our conclusion as to aggregation, we do not deem it necessary to consider the other questions raised in the record. The decree of the District Court is reversed, with the direction to dismiss the bill for want of equity.

A true copy.

Teste:

Clerk of the United States Circuit Court of
Appeals for the Seventh Circuit.

And afterwards, on the same day, to-wit: On the fourth day of January, 1916, in the October term last aforesaid, the following further proceedings were had and entered of record, to-wit:—

299

TUESDAY, January 4, 1916.

Court met pursuant to adjournment and was opened by proclamation of crier.

Present:

Hon. Francis E. Baker, Circuit Judge, presiding.
 Hon. Christian C. Kohlsaat, Circuit Judge.
 Hon. Julian W. Mack, Circuit Judge.
 Hon. Samuel Alschuler, Circuit Judge.
 Edward M. Holloway, Clerk.
 John J. Bradley, Marshal.

Before:

Hon. Christian C. Kohlsaat, Circuit Judge.
 Hon. Julian W. Mack, Circuit Judge.
 Hon. Samuel Alschuler, Circuit Judge.

2285.

E. E. JOHNSON COMPANY

VS.

GRINNELL WASHING MACHINE COMPANY.

Appeal from the District Court of the United States for the Southern District of Illinois, Northern Division.

This cause came on to be heard on the transcript of the record from the District Court of the United States for the Southern District of Illinois, Northern Division, and was argued by counsel.

On Consideration Whereof, It is now here ordered, adjudged and decreed by this Court that the decree of the said District Court in this cause, be, and the same is hereby reversed with costs; and that this cause be, and the same is hereby remanded to the said District Court with the direction to dismiss the bill for want of equity.

And afterwards, to-wit: On the second day of February, 1916, in the October term last aforesaid, there was filed in the office of the Clerk of this Court a certain Petition for Rehearing, which said Petition for Rehearing is not copied here nor made a part hereof.

300 And afterwards, to-wit: On the twenty-ninth day of March, 1916, in the October term last aforesaid, the following further proceedings were had and entered of record, to-wit:—

WEDNESDAY, March 29, 1916.

Court met pursuant to adjournment and was opened by proclamation of crier.

Present:

Hon. Christian C. Kohlsaat, Circuit Judge, presiding.
 Hon. Samuel Alschuler, Circuit Judge.
 Edward M. Holloway, Clerk.
 John J. Bradley, Marshal.

Before:

Hon. Christian C. Kohlsaat, Circuit Judge.
 Hon. Julian W. Mack, Circuit Judge.
 Hon. Samuel Alschuler, Circuit Judge.

2285

E. E. JOHNSON COMPANY

vs.

GRINNELL WASHING MACHINE COMPANY.

Appeal from the District Court of the United States for the Southern District of Illinois, Northern Division.

It is ordered by the Court that the petition for a rehearing in this cause be, and the same is hereby denied.

And afterwards, to-wit: on the eighteenth day of April, 1916, in the October term last aforesaid, the following further proceedings were had and entered of record, to-wit:—

301

TUESDAY, April 18, 1916.

Court met pursuant to adjournment and was opened by proclamation of crier.

Present:

Hon. Francis E. Baker, Circuit Judge, presiding.
 Hon. Christian C. Kohlsaat, Circuit Judge.
 Hon. Julian W. Mack, Circuit Judge.
 Hon. Samuel Alschuler, Circuit Judge.
 Edward M. Holloway, Clerk.
 John J. Bradley, Marshal.

Before:

Hon. Francis E. Baker, Circuit Judge.
 Hon. Julian W. Mack, Circuit Judge.
 Hon. Samuel Alschuler, Circuit Judge.

2285.

E. E. JOHNSON COMPANY

vs.

GRINNELL WASHING MACHINE COMPANY.

Appeal from the District Court of the United States for the Southern District of Illinois, Northern Division.

Upon application of Mr. C. C. Linthicum, counsel for the appellee in the above entitled cause, it is ordered by the Court that the man-

date in this cause be, and the same is hereby stayed until the further order of this Court.

302 United States Circuit Court of Appeals for the Seventh Circuit.

I, Edward M. Holloway, Clerk of the United States Circuit Court of Appeals for the Seventh Circuit, do hereby certify that the foregoing printed pages, numbered from 283 to 301 inclusive, contain a true copy of the proceedings had and papers filed (except the appearance of counsel, briefs of counsel, Stipulation as to Complainant's Exhibit No. 15, the Petition for a Rehearing, and the Motion for Mandate) in the case of E. E. Johnson Company vs. Grinnell Washing Machine Company, No. 2285, October Term, 1914, as the same remain upon the files and records of the United States Circuit Court of Appeals, for the Seventh Circuit.

In testimony whereof I hereunto subscribe my name and affix the seal of said United States Circuit Court of Appeals for the Seventh Circuit, at the City of Chicago, this fourteenth day of September, A. D. 1916.

[Seal United States Circuit Court of Appeals, Seventh Circuit.]

EDWARD M. HOLLOWAY,
Clerk of the United States Circuit Court
of Appeals for the Seventh Circuit.

303 UNITED STATES OF AMERICA, ss:

[Seal of the Supreme Court of the United States.]

The President of the United States of America to the Honorable the Judges of the United States Circuit Court of Appeals for the Seventh Circuit, Greeting:

Being informed that there is now pending before you a suit in which E. E. Johnson Company is appellant, and Grinnell Washing Machine Company is appellee, No. 2285, which suit was removed into the said Circuit Court of Appeals by virtue of an appeal from the District Court of the United States for the Southern District of Illinois, and we, being willing for certain reasons that the said cause and the record and proceedings therein should be certified by the said Circuit Court of Appeals and removed into the Supreme Court of the

304 United States, do hereby command you that you send without delay to the said Supreme Court, as aforesaid, the record and proceedings in said cause, so that the said Supreme Court may act thereon as of right and according to law ought to be done.

Witness the Honorable Edward D. White, Chief Justice of the United States, the twentieth day of October, in the year of our Lord one thousand nine hundred and sixteen.

JAMES D. MAHER,
Clerk of the Supreme Court of the United States.

305 In the United States Circuit Court of Appeals for the Seventh Circuit.

No. 2285.

E. E. JOHNSON COMPANY, Appellant,
vs.
GRINNELL WASHING MACHINE COMPANY, Appellee.

Stipulation.

It is hereby stipulated and agreed by and between counsel for the respective parties to the above entitled cause that the Transcript of Record herein, heretofore certified to the Supreme Court of the United States by the Clerk of this Court as the record herein in connection with the petition for a writ of Certiorari filed by the appellee and now on file in said Supreme Court, is the record in said cause, and may be used as the record herein in the proceedings upon and hearing of said petition for Certiorari heretofore filed in the Supreme Court of the United States and allowed by and now pending in said Supreme Court.

Dated, October 26th 1916.

CHARLES C. LINTHICUM,
RALPH ORWIG,
Solicitors for Appellant.
TAYLOR E. BROWN,
CLARENCE E. MEHLHOPE,
Solicitors for Appellee.

Endorsed: Filed Nov. 3, 1916. Edward M. Holloway, Clerk.

306

Return to Writ.

UNITED STATES OF AMERICA,
Seventh Circuit, ss:

In obedience to the command of the within writ of certiorari and in pursuance of the stipulation of the parties, a full, true and complete copy of which is hereto attached, I hereby certify that the transcript of record furnished with the application for a writ of certiorari in the case of E. E. Johnson Company, Appellant, vs. Grinnell Washing Machine Company, Appellee, No. 2285, is a full, true and complete transcript with all the pleadings, proceedings and record entries in said cause as mentioned in the certificates thereto.

In testimony whereof, I hereunto subscribe my name and affix the seal of the United States Circuit Court of Appeals for the Seventh Circuit, at office in the City of Chicago, Illinois, this sixth day of November, A. D. 1916.

[Seal United States Circuit Court of Appeals, Seventh Circuit.]

EDWARD M. HOLLOWAY,
*Clerk of the United States Circuit Court
of Appeals for the Seventh Circuit.*

307 [Endorsed:] File No. 25,505. Supreme Court of the United States. No. 675, October Term, 1916. Grinnell Washing Machine Company vs. E. E. Johnson Company. Writ of Certiorari. Filed Nov. 8, 1916. Edward M. Holloway, Clerk.

308 [Endorsed:] File No. 25,505. Supreme Court U. S., October Term 1916. Term No. 675. Grinnell Washington Machine Company vs. E. E. Johnson Company. Writ of certiorari and return. Filed November 10, 1916.

IN THE

Supreme Court of the United States

October Term, 1907

No. 272

GRANITE WORKING MACHINE COMPANY, Plaintiff,

vs.
E. E. JOHNSON, Defendant.

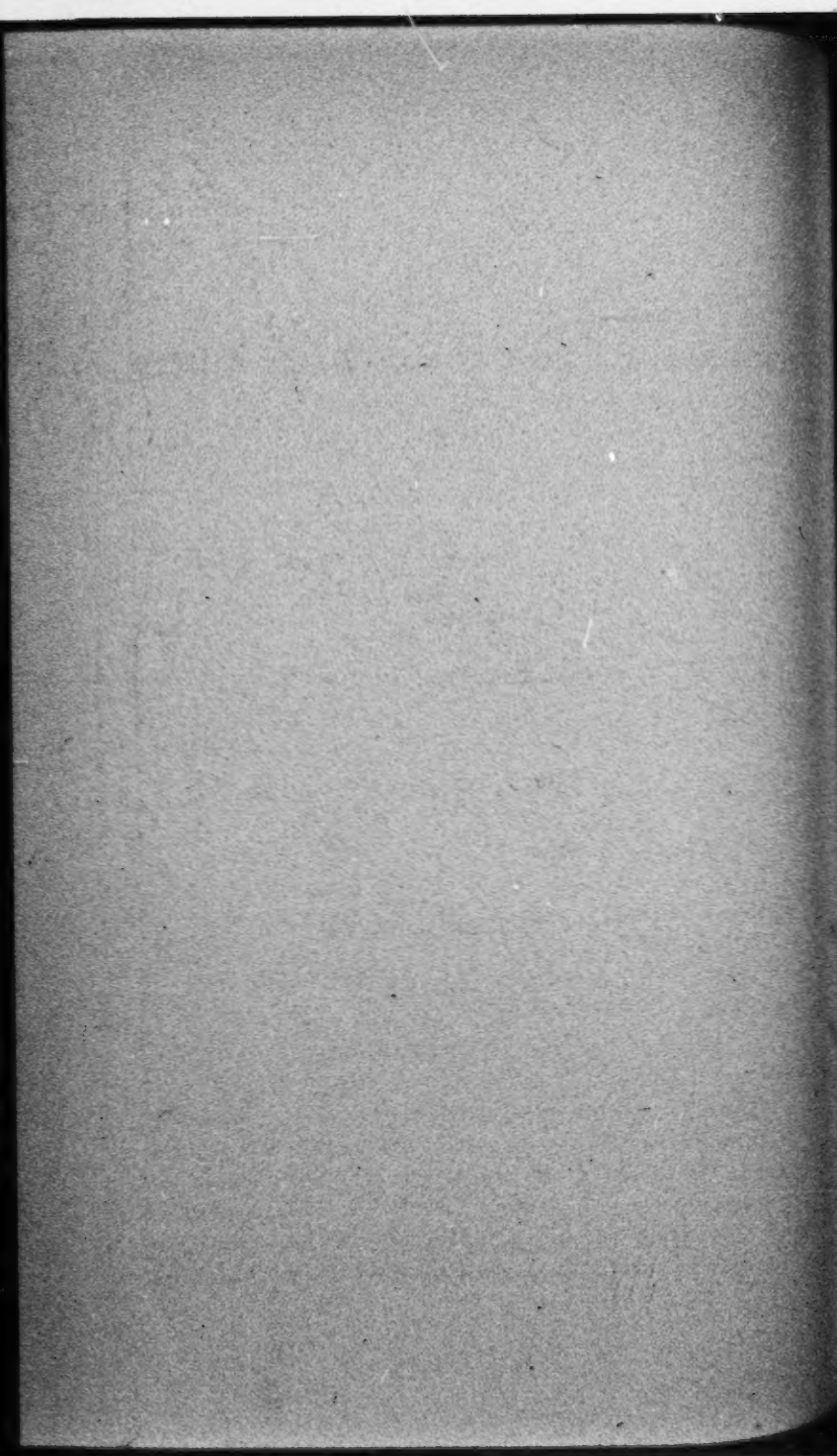
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IN THE
Supreme Court of the United States

OCTOBER TERM, 1917.

No. 272.

GRINNELL WASHING MACHINE COMPANY, *Petitioner*,
vs.
E. E. JOHNSON COMPANY.

BRIEF FOR PETITIONER.

STATEMENT OF THE CASE.

This is a suit in equity brought by the Grinnell Washing Machine Company, a corporation of South Dakota, against the E. E. Johnson Company, a corporation of Illinois, for the infringement of Letters Patent No. 950,402, granted to W. F. Phillips February 22, 1910 (upon an application filed January 15, 1909), for a new and improved Gearing Device

intended particularly for use in operating domestic washing and wringing machines by power supplied by an electric motor.

The patent covers what has proved to be an exceedingly valuable improvement that has gone into extensive use and met with great public favor and has been, as a natural consequence, the subject of much litigation.

The invention of the patent was, after its inception in 1908, put into public use without delay by the owner thereof, and almost immediately thereafter other manufacturers began to abandon the forms of gearing they had theretofore used and to adopt various simulations of the Phillips Gearing. This necessitated the bringing of a number of suits. The first suit, of which we have a report, is that of Grinnell Washing Machine Co. vs. Woodrow, brought in the District Court for the Southern District of Iowa, and which resulted, on September 15, 1913, in the sustaining as valid, claims 5 to 8 of the patent (the ones here involved), and the entry of a decree for an injunction and an accounting (209 Fed., 621). The next suit was Grinnell Washing Machine Co. vs. Newton Washing Machine Co., also brought in the District Court for the Southern District of Iowa, in which the same claims of the patent were held valid. There is no report of an opinion filed by the District Court in that case, but, on appeal to the Circuit Court of Appeals for the Eighth Circuit, the decree below was, on September 17, 1915, affirmed (222 Fed., 512). The third reported case is the one at bar. It came on before Judge Humphreys in the District Court for the Northern Division of the Southern District of Illinois, who, on March 22, 1915 (Tr., 208), held the same claims valid and infringed and entered a decree for an injunction and an accounting. From this decree appeal was taken to the Circuit Court of Appeals for the Seventh Circuit, and that Court, on January 4, 1916, reversed the de-

cree below and held the patent invalid on the ground that it covered a mere aggregation of mechanical elements and not a true combination (Tr., 261; 231 Fed., 988).

Because of the opposite conclusions in regard to the validity of the patent reached by the Circuit Court of Appeals for the Eighth Circuit and the Circuit Court of Appeals for the Seventh Circuit, this Court issued its writ of certiorari to the latter Court, which accounts for the presence of this case here.

ARGUMENT.

The course of the litigation on the patent has practically eliminated all defenses save one, namely, the alleged inherent non-patentability of the invention, or, as the English Courts would say, the alleged lack of subject-matter.

In treating this defense, it is necessary to very briefly refer to the prior art relating to the domestic washing and wringing of clothes, in order to ascertain just what represented high water mark at the time the patentee Phillips entered the field and projected his improvement.

THE PRIOR WASHING AND WRINGING ART.

In the days of our grandparents, the domestic washing and wringing of clothes was almost entirely a hand operation. A tub was filled with water, a scrubbing board having a corrugated surface was stood therein, a garment to be washed was soaped and, while grasped in the hands, was rubbed back and forth over the scrubbing board until the dirt was eliminated, after which the garment was wrung out by hand, placed in a tub of rinse water and then wrung out again by hand (and sometimes placed in a tub of blueing water, and again wrung out), and finally hung on a clothes line to dry. The introduction of the roller wringing machine was a great advance. This wringer was attached to

the tub and, after the hand washing with the scrubbing board was finished, the garment was passed through the wringer. the only fatiguing operation involved in the wringing being the turning, by hand, of the crank attached to one of the wringer rolls.

As the art progressed, the tub and scrubbing board were replaced by a washing machine. This took various forms. One very popular form consisted of what was called a "dolly" washing machine. Briefly described, this consisted of a tub or receptacle supported upon legs and covered by a removable hinged top upon which was adequately supported and arranged a vertical shaft carrying at its lower end a washer head or dolly extending down into the tub and an operating mechanism, worked by a handle, for imparting to the vertical dolly shaft and dolly head a reciprocating back and forth motion. The form of mechanism employed for conveniently imparting the reciprocatory motion to the dolly shaft and its head by the operation of the hand lever was, of course, susceptible of infinite modifications and many inventions were made and patents issued for improvements covering the same.

Wherever these dolly washing machines were employed, the wringing was, at first, usually done, as before, by a hand-operated wringing machine mounted upon another independent tub.

In the development of the art, the washing machine, instead of being operated by hand, came to be operated by an electric motor, which was either mounted upon or located adjacent the washing machine and arranged so that its power might be applied to give the requisite back and forth motion to the dolly shaft. It was proposed, also, to operate, by power, instead of by hand, the wringing machine.

Finally, along came one Oliver B. Woodrow, who conceived the idea of employing, in connection with a dolly

washing machine, power-operated by an electric motor, a wringing machine mounted upon and supported by the washing body and adapted to be driven by the same motor that drove the washing machine.

In carrying out his scheme, Woodrow (see Woodrow patent No. 921,195, Tr., pp. 274, *et seq.*) located his electric motor beneath the body of his washing machine and arranged it so that it should continuously rotate, in one direction, a main driving shaft. Upon this driving shaft he mounted, loosely, a spur gear wheel that constituted the first instrumentality in a train of mechanism that was adapted to impart to the vertical dolly shaft and dolly head the requisite reciprocatory or back and forth movement; and he also mounted, loosely, upon the said main driving shaft a pulley which, in turn, constituted the first instrumentality in a train of mechanism for rotating one of the rolls of the wringing machine. The hub of the loosely mounted spur gear wheel constituting part of the train which was adapted to drive the washer head was provided with laterally projecting teeth, and the hub of the pulley which constituted the first element in the train of mechanism for driving the wringer was also provided with similar teeth, and upon the driving shaft, between the hub of the spur gear, on the one hand, and the hub of the pulley, on the other hand, was mounted a sliding clutch sleeve which was provided with teeth at each end and was connected to the main drive shaft by a spline and groove connection which, while requiring it to turn continuously with the drive shaft as the latter was rotated by the electric motor, permitted it to be shifted longitudinally back and forth upon the drive shaft so that, when moved to the right, its teeth on the right end would engage with the toothed hub of the spur gear of the washer head operating mechanism and thus cause the washing machine to be driven, and so that, when moved to the left, its teeth on the

left end would engage with the teeth on the hub of the pulley of the wringer operating mechanism, and thus drive the wringer. Such amplitude of longitudinal motion was given this sleeve (which may be properly called a clutch sleeve) of the Woodrow machine, that, when it was connected with the pinion of the washer mechanism, on the one hand, it was necessarily disconnected from the pulley of the wringing mechanism, and *vice versa*, and when the clutch sleeve was in mid-position it was operatively connected with neither the pinion of the washer mechanism nor with the pulley of the wringer mechanism, but was permitted to rotate idly, without function, with the main drive shaft. A lever was provided by means of which the clutch sleeve could be shifted upon the main drive shaft either into engagement with the pinion of the washer mechanism or with the pulley of the wringer mechanism, or maintained in neutral position, as desired. No provision was made for locking the clutch sleeve in neutral position, nor for reversing the rotation of the wringer rolls, with the consequence that the latter had always to turn in the same direction, without the possibility of reversal.

Woodrow's machine had, of course, the advantage of compactness, in that it embodied in one self-contained structure a dolly washer, a wringer and an electric motor that was adapted to, at will, supply power either to the washer or supply power to the wringer, but no provision at all was made for operating by the power of the motor, the washer and the wringer at the same time.

When Phillips entered the field, the Woodrow machine represented high water mark in the art.* Phillips saw and

*The prior British patent to Shedlock (Tr., 269), to which much attention is given in the record, likewise lacks the essential characteristics of the Phillips invention. It discloses, not a domestic power driven machine, but a machine designed for the use of large laundries, and embodies two washers—not of the "dolly" type, but of the revol-

appreciated the advantage of the compactness of the Woodrow machine, but he appreciated also that it did not by any means solve the problem of getting out with the greatest possible promptitude the "week's wash," because the washing and wringing operations were still independent operations, requiring for their successive performance a great loss of time. So, he set to work to solve the problem of bettering this condition. His broad conception was of a power operated machine that should wash and wring the clothes at the same time, by power applied through a main continuously rotating driving shaft, and his further conception was that the wringing mechanism of such a combined machine should be capable of such manipulation that the wringer rollers could be instantly rotated either in one direction or the other, or arrested and thrown out of operation entirely when the exigencies of the case demanded, without interrupting the continuous revolution of the motor or main driving shaft. Such conceptions, without the suggestion of definite means for carrying them into practice would, of course, have amounted to nothing, and so Phillips set to work to devise definite, practical means for carrying his ideas into effect. The result was the production of the Gearing Device of the patent in suit. This Gearing Device is well illustrated in the drawings of the patent (Tr., 229-231) and is adequately described in the specification of the patent, but perhaps the Court will more readily understand its construction from the particularly lucid description of it given by Mr. McElroy, complainant's expert, as follows:

ing washer-head type—which are arranged to be operated alternately, and a pair of independent wringer rolls designed to be connected up to the driving shaft only when the washers are both put out of action.

There is no cooperation between the washers and the wringer. When either washer is in action the wringer is idle and when the wringer is in use, both washers are idle.

The rolls of the independently-operated wringer may be run in either direction, but there is no provision for locking, in neutral position, the control-lever by which this is enabled to be done.

(Tr., p. 39.)

"(Q. 7) As set out in the second paragraph of the specification of the patent in suit, the object of this invention is 'to provide a gearing device of simple, durable and inexpensive construction, especially designed for use in operating washing machines and wringers, by means of power applied by an electric motor or other source of power.' The particular type of washing machines for which this gearing was invented and to which it is applied, is what is known in the art as the 'dolly' type of machine.

In the dolly type of machine, there is a tub 10, on which is hinged a cover or lid 11. Journaled in this cover is a vertical shaft 45, known as the dolly shaft. Mounted to slide up and down on this dolly shaft is the dolly, which consists of a block of wood with three or four pins projecting downward, so that when the lid is down, the pins extending downward from the dolly stick down into the clothes which are placed in the water in the tub. Now, when the machine is operated, the dolly shaft and with it the dolly, is swung back and forth through a distance of say 180 to 270 degrees—that is to say, one-half of a full turn to three-quarters of a full turn. These tubs, as you will find by an examination of the interior, are ribbed on the bottom and on the sides, and the action of the dolly in swinging the clothes back and forth over these ribs is somewhat like that of a woman doing a washing with the old fashioned wash board, where the clothes were held in the hands and rubbed up and down over the ribs or corrugations in the wash board, but of course here the washing is done by power instead of by hand.

After the washing is done, the soapy water has to be squeezed out of the clothes that have been washed, and for this purpose the wringer is mounted on the side of the tub and the wringer consists of two rolls that rotate toward each other and carry the clothes, which may be inserted between the wringers, passed through the wringers and out on the other side and into another tub

which contains the rinse water, so as to rinse out the soap that may be left; and frequently in washing they soak the clothes over night before they are put into the washtub, and in that case, the tub or other receptacle with the clothes in soak is brought up to the side of the wringer and the wringer is operated in the opposite direction, to carry the clothes from the tub in which they soaked, through the wringers and into the washtub, having the hot, soapy water in it, preparatory to washing, so that it is essential in the proper use of these machines, that the wringer rolls run in both directions.

In the power machines, the most common power used is a small electric motor. In the case of the machine of the patent in suit, this motor 23 is fastened on the bottom of the tub and the armature shaft of the motor is secured onto a small pulley 22 which is connected by a belt 21 with a balance wheel 20, which is journaled on a stub shaft supported from the bracket 13. This large pulley wheel or belt wheel has secured on the hub a small spur gear pinion 17 which meshes with a large spur gear wheel 16, which is secured on the outer end of the horizontal power shaft 15, which is journaled in two bearings 14, projecting upward from the bracket or bearing 13. Now, when the motor is running, as is always the case when the machine is being used, it runs continuously in one direction and the train of gearing which I have described keeps the power shaft 15 running always in the same direction at an average slower rate of speed than the armature shaft of the motor. Now, this power shaft must do two things; so far as the washing is concerned, it must swing or rotate this vertical dolly shaft back and forth through the half or three-quarters of a full turn, continuously from the rotation of the drive shaft 15, always in the same direction. In other words, it is a special form of an automatically operated reversing gearing, and the special form shown in this patent consists of a spur gear pinion 40, secured on the shaft 15, which meshes with the larger spur gear wheel 44, secured on the shaft 43,

journalled in bearings 42. This spur gear wheel 44 carries an eccentric gear which is connected by a pitman 48 with a pin on the horizontal reciprocating rack bar 47. This rack bar is continuously in mesh with a spur gear pinion 46, rigidly secured on the top of the dolly shaft, so that as the power shaft is continuously rotated in one direction, the dolly shaft 45 is swung back and forth in alternate directions; and I might say that in this dolly type of machine, it seems to be substantially essential that the dolly shaft shall have that rotation of somewhere between one-half and three-quarters of a complete turn before it reverses every time.

Now, there must also be from this power shaft 15 a train of gearing to the wringer rolls and in the specific construction shown in this Phillips patent, the end of the power shaft 15—the inner end—has secured on it a small bevel gear 15^a which meshes with two mitre gears 26 and 27 which are loosely mounted on a shaft 24 which extends at right angles to the power shaft, but in the same vertical plane. The shaft 24 has splined on it, that is to say, secured on it so it can slide back and forth on the shaft, but must always rotate with the shaft, a clutch sleeve 30 which has on its ends clutch teeth shaped to be engaged with similar clutch teeth on the inner ends of the hubs of the mitre gears 26 and 27. Of course, this clutch sleeve is engaged with only one of these mitre gears at a time, and if it engages with one mitre gear, the wringer rolls are rotated in one direction; if it engages with the other, the wringer rolls are rotated in the opposite direction, so that all you have to do to reverse the direction of the rotation of the wringer rolls is to shift this clutch sleeve from engagement with the mitre gear 26 into engagement with the mitre gear 27, and to do this shifting there is an operating handle 34 provided, that extends across the machine beneath the wringer to a position where it can be readily operated by the person doing the washing, as she stands in front of the tub in a position to lift the garments out one by one and stick them between

the rolls as they are drawn through. If the garments are being wrung from the tub and the garments should stick, or if she accidentally caught her fingers, the operator would simply shift the handle 34 into the opposite position or into an intermediate position, so as to stop the revolution of the rolls in that direction and cause them to rotate in the other direction, so as to feed the clothes or garments back toward the tub. This handle 34 is secured on the end of a rock shaft 32 which has an upwardly projecting arm 33 that fits into an annular groove 30, into the clutch sleeve 39, so that as you swing the handle, the clutch sleeve is moved from one position to another. There are three positions in which the clutch sleeve may stand: a neutral position in which the clutch is not in engagement with either of the mitre gears 26 and 27, and in this position the wringer rolls will be at rest in spite of the fact that the motor is running and the shaft 15 is rotating. There is a notch segment 35 with which the handle 34 co-operates and this segment has three notches in it, and when the wringer rolls are at rest, the handle is in the center of the notches. If the handle is swung into the topmost of the three notches, the wringer rolls will rotate in one direction; if it is swung down into engagement with the lowermost of the three notches, the wringer rolls rotate in the opposite direction.

I should have explained the connections between the shaft 24 and the shaft 39, on which the wringer roll is secured. These connections consist of a sprocket pinion 36 secured on the outer end of the shaft 24 connected by a sprocket chain 37 with a large sprocket wheel 38 secured on the outer end of the shaft 39."

Now, in disposing of a "week's wash" by the housewife or domestic, with the aid of a Phillips machine, each batch of clothes to be treated is handled as follows: The lid or cover of the washer is raised and a sufficient quantity of soapy water is placed in the washer, and the operating handle

34 of the wringer controlling mechanisms is placed in mid-position as shown in Fig. 6 of the patent, so as to also move in said position the clutch sleeve 29 as shown in Fig. 7 of the patent. The electric motor is now started up, which has the effect of putting the main driving shaft 15 and the spur gear pinion 40 secured thereon into continuous rotation in one direction. The hinged cover of the machine which carries the dolly shaft and dolly head and part of the gear mechanism, including the larger spur gear wheel 44, is now brought down, which has the effect of causing the spur gear wheel 44 to go into mesh with the spur gear pinion 40 of the drive shaft and set the dolly shaft and its head into reciprocating motion, the dolly head stirring up and producing the scrubbing action on the clothes, referred to by Mr. McElroy in his statement. This washing and scrubbing operation is continued until the batch of clothes in the washer is thoroughly washed, the time consumed being but a few minutes. The hinged cover of the washer is then swung up, thereby automatically throwing the gear 44 of the dolly operating mechanism out of gear with the pinion 40. With the main driving shaft 15 still continuously rotating, the operator then shifts the control handle 34 so as to cause the clutch sleeve 29 to engage with the hub of the bevel pinion 26 and thereby cause the bevel pinion 15^a secured to the end of the main drive shaft 15 to drive the shaft 24, and through the latter, the sprocket wheel 36, the sprocket chain 37, the sprocket wheel 38 and the shaft 39 of the lower wringer roll, cause the wringer rolls to rotate so that a garment placed between them will be carried outwardly. The garments in the receptacle of the washer are then removed, one by one, and passed out between the wringer rolls so as to drop them into a tub of rinse water located beneath to receive them, the soapy water squeezed out of the garments being shed back into the washing receptacle. When the first batch of clothes has

thus been washed, wrung and passed out through the wringer rolls and into the tub of rinse water, as described, a second batch of clothes is inserted in the soapy water in the washer, and the cover of the washer again swung down, thereby again connecting the gear 44 with the pinion 40 of the continuously rotating drive shaft, and putting the dolly into action again, to cleanse the second batch of clothes. While this second batch of clothes is thus being washed by the action of the dolly, the operator shifts the handle which controls the wringing mechanism so as to cause the clutch sleeve 29 to disengage from the teeth on the hub of the pinion 26 and engage with the teeth on the hub of the pinion 27, and thus cause the bevel pinion 15^a on the end of the continuously operating drive shaft to reverse the motion of the wringer rolls, through the intervening mechanism before indicated, so that the garments in the rinse water tub may be passed back through the rolls of the wringer and cast into a hamper while the rinse water drains back into the rinse water tub. This second action of the wringer rolls (now reversed) upon the first batch of clothes, it will be observed, takes place simultaneously with the washing of the second batch of clothes, in the washer without any interference therewith. In point of fact, while this cleansing of the second batch of clothes is being effected by the action of the dolly in the washer, the first batch of clothes, instead of being cast into a hamper, as in the case first above supposed, may be cast into a tub of blueing water and then passed from the blueing water again through the reversed wringer rolls, the expressed blueing-water shedding back into the blueing tub, which has displaced the rinse-water tub for this purpose. This second passing of the first batch of washed clothes through the wringing rolls is enabled to be accomplished while the second batch of clothes is being washed, because

the washing operation takes about twice as long as any one wringing operation.

If, during the passing of a garment through the wringer rolls, in either direction, the rolls become clogged, or a particularly thin garment becomes wound upon the rolls, or the operator's fingers become caught between the rolls, the rolls may be instantly stopped, or stopped and reversed, by the mere operation of the control-handle, which is always in convenient reach of the operator for the purpose. Thus the power-operated wringer which might otherwise be a source of danger in a household is rendered just as susceptible of control as is a hand-operated wringer.

From this description it will be seen, that the net result of Mr. Phillips' new combination of mechanism is that, by a power driven machine, he is enabled to carry on, at the same time, as a continuous process, the washing and wringing of a "week's wash" without stopping his motor or his main driving shaft and without requiring the operator to "wait for the machine," until the "week's wash" is finished, thereby reducing the time for the accomplishment of this work at least fifty per cent; also that the wringing mechanism is kept at all times under perfect control, even while the washing mechanism is in action, the wringing rolls being susceptible of being instantly started or stopped and of being rotated in either direction by the simple operation of the hand control lever. The economy of time and effort which thus results from the use of the Phillips combination renders it a labor saving device of the first quality and accounts, no doubt, for the universality of its use. This achievement is like the "making of two blades of grass grow where one grew before."

All of the courts that have studied the Phillips invention, with the exception of the Court of Appeals for the Seventh Circuit, have found it to embody a true combination.

For instance, in the case of Grinnell vs. Woodrow (209 Fed., 621), Judge McPherson said (page 621):

"At the argument, as well as for some time later, I was inclined to be of the opinion that these different elements and mechanisms, when united, were an aggregation only, and therefore not the basis for a valid patent: but upon a rereading of the record, and by giving additional attention thereto and to the whole case, I have reached the conclusion that all these elements and mechanisms formed a combination both useful and the subject of an invention, and therefore sustain the patent, and claims 5, 6, 7, and 8 thereof."

In the case of Newton vs. Grinnell, in the United States Circuit Court of Appeals for the Eighth Circuit, (222 Fed., 512), the Court said (page 513):

"There is no new element in the combination. Therefore, in order to be patentable, the combined action must produce some new result, or an old result in a more efficient and economical manner. The new result in this instance is the washing and wringing of clothes at the same time in a safe and convenient way. This does not mean that the garment is washed and immediately thereafter passed through the wringer. It means that, while some garments are going through the wringer, other garments are being washed and that the two operations go on simultaneously. The wringer is made subject to perfect control by a lever easily and safely manipulated by the operator. The device possesses elements of utility, novelty and invention. The washing machine and wringer are, by the gearing device, made to act jointly and a new and useful result is produced. The device is therefore patentable."

In the case at bar Judge Humphrey said (Tr., p. 208):

"The finding of the Court of Appeals of the Eighth Circuit in the Newton case accords entirely with the impressions I received on the trial of the case at bar."

THE FUNDAMENTAL ERROR OF THE COURT OF APPEALS FOR
THE SEVENTH CIRCUIT IN TREATING THIS CASE.

By a somewhat curious process of reasoning, the Court of Appeals for the Seventh Circuit came to the conclusion and adjudged that Phillips had not invented a new combination of elements co-operating together, in a patent law sense, but a mere unpatentable aggregation of elements, all separately old.

From the reading of the opinion of His Honor, Judge Kohlsaatt, in speaking for the Court of Appeals, it is apparent that he regarded Phillips' achievement as not different in kind from that of one who, having attached a vise to one end of a work bench and a screw cutter to the other end of the same bench, conceived that he had made a new patentable combination, notwithstanding the fact that there was no co-operative relation between the vise and the screw cutter, and that each performed its own individual office, independently of the other and without the production of any new result, due to their co-operation. But such a case, which, of course, is one of pure aggregation, is quite different from the case presented by Phillips. With Phillips the underlying object or result sought to be attained was the accomplishment, by a continuous uninterrupted process, in about one-half the usual time, of the washing and wringing involved in the handling of a "week's wash," so that, while one batch of clothes was being washed, another batch of clothes was being passed one or more times through the wringer, thus cutting in two the time ordinarily required for the accomplishment of the same result. And the specific

means devised by him for attaining this desirable result consisted in the combination with the continuous rotating power shaft of the gearing connections between it and the dolly shaft, whereby the dolly could be given its proper reciprocating motion, of the gearing connections between such continuously rotating power shaft and the shaft of the wringer rolls whereby the wringer rolls could be actuated from the power shaft, and the hand control means, whereby, without interrupting the continuous rotation of the shaft, the wringer rolls could be started or stopped, or caused to be rotated in either direction, so as to carry on all of the operations necessary to the proper control of the wringer, without interfering with the action of the power shaft or of the washer. All the necessary constituents of a perfectly good patentable combination are thus present in the Phillips machine, *i. e.*, a series of co-ordinated and co-operating elements so associated as to produce a new and beneficial result which is not the mere sum of the results flowing from the separate operations of the individual elements.

Judge Kohlsaat, in expressing the opinion of the Court below, seems to imply that, because it was impossible, in the Phillips machine, to wash and wring a given article, a blanket, for instance, at the same time, that there could be no combination, in a patent law sense, between the elements of the mechanism for controlling both the washer and the wringer. The answer to this is, of course, that it is not necessary, in the case of a perfectly good patentable combination, that the elements embraced in the combination shall operate at the same time upon the material being treated. Very few combinations would survive such a test. Take, for instance, the case of a harvester, where we have a main frame, supporting wheels, a driving shaft,

a quadrant-shaped platform supported by the main frame, a cutter bar at the front edge of the platform driven from the driving shaft and operating to cut the standing grain, and a rake also operated from the driving shaft for sweeping the cut grain across the platform and from the rear thereof in the form of gavel. In such a machine, while the cutting mechanism at the front edge of the platform is cutting a portion of the standing grain, an earlier cut portion is lying upon the platform and another still earlier cut portion is being swept from the platform by the rake and deposited upon the ground at the rear of the machine. Manifestly, here, the same portion of grain is not being cut, received by the platform, and swept from the platform, all at the same time, but the action of the several elements of the combination on any given portion of the grain is successive. The case we have put is not a suppositional one. The facts are the facts of the great case of *Seymour vs. Osborne*, determined by this Court, in the year 1870 (11 Wall., 516).

The report tells us (p. 530) that:

"The claim of the complainant's patent reissue No. 1682, was in the following words:

"The combination of the cutting apparatus of a harvesting machine with a quadrant-shaped platform arranged in the rear thereof, and a sweep-rake operated by mechanism in such manner that its teeth are caused to sweep over the platform in curves when acting on the grain, these parts being and operating substantially as hereinbefore set forth."

And it was contended by the complainants to be a claim to a combination consisting of

(1) A cutting apparatus.

(2) A quadrant-shaped platform combined with and placed behind the cutting apparatus.

(3) An automatic sweep-rake connected with the frame by a pivot and operated by cog wheels so as to sweep over the platform while moving the grain towards the delivery side of the platform."

This contention though vigorously attacked by defendant was sustained by this Court and the claim held to be valid.

In the case of National Tube Company vs. Aiken, decided by the Circuit Court of Appeals for the Sixth Circuit, July 11, 1908 (163 Fed., 254), involving among others, patent 450,360, for Mechanism for Conveying and Cooling Metal Plates, the precise questions here involved, namely, (1) that of alleged aggregation, and (2) that of the alleged necessity that all the parts of a patentable combination of mechanism should act *simultaneously* upon the same article, were most carefully discussed by the late Mr. Justice Lurton, with a review of the authorities. A typical claim of the patent involved read as follows:

(55 O. G., p. 213.)

"As a means for conveying and cooling metal plates, the combination, with rolls adapted to roll metal plates, and the rolling mill feed table, of conveying tables, one of which is situate adjacently to and is independent of the feed table and is adapted to receive the metal plates therefrom, and transfer mechanism adapted to transfer the plate from the first table to the next, substantially as and for the purposes described."

It was objected that this and other claims of the patent were for mere aggregations. This contention was overruled, the learned Justice observing:

(P. 262.)

"The argument that the straightening press does not act simultaneously with the other devices included in the combination, if true, is not enough to defeat the patent. If that device is so arranged with the other devices made elements in the combination as that each part co-operates to produce a single practical and beneficial result, it is not important that that final result shall have been produced by a simultaneous or successive action of the combined elements."

So ably is the whole subject discussed by the learned Justice that we are tempted to here quote at large from his opinion, but we refrain from doing so, contenting ourselves with directing attention to that portion of the opinion comprehended between the middle of page 260 and the end of page 262.

The machine of the Woodrow patent 921,195 (Tr., pp. 274, *et seq.*) much more nearly approaches Judge Kohlsaat's idea of an aggregation than does the machine of Phillips, for, in the Woodrow machine, the washer and the wringer, while susceptible of alternate connection with the motor and motor shaft, are not capable of connection therewith at the same time, the result being that, when the washer is in operation the wringer is necessarily out of operation, and when the wringer is in operation the washer is necessarily out of operation. There is no possibility, under any circumstances, of operating the washer and the wringer simultaneously, nor of reversing the motion of the wringer rolls while the washer is in operation, and, therefore, that economization of time which is an essential characteristic of the Phillips invention and the main new result accomplished, is not realized.

It is significant in this connection that after the advent of the Phillips machine on the market Woodrow, who had theretofore been making and marketing the machine of

his patent, changed his machine so that it would embody the Phillips invention and enable washing and wringing to be done at the same time, coupled with the capability of full control of the wringer meanwhile. For putting out this converted machine Woodrow was sued by plaintiff and was enjoined in the case of Grinnell Washing Machine Company vs. Woodrow, 209 Fed., 621.*

CLAIMS OF THE PHILLIPS PATENT.

Claims 5 to 8 of the Phillips patent are involved in this suit. Of these claims it is only necessary to specifically consider the 6th, which is typical. It reads as follows:

(Tr., p. 232.)

"6. A gearing device of the class described, comprising a support, a power shaft mounted on the support, means for imparting a continuous rotary motion to the power shaft, an upright shaft 45 mounted in the support, a driving device for the upright shaft operatively connected with the power shaft and capable of imparting an alternating rotary motion to the upright shaft, a horizontal shaft 39, a driving mechanism for said shaft 39 connected with the power shaft and capable of imparting a rotary motion to the shaft 39, and a controlling means applied to the driving device for the shaft 39, for reversing the movement thereof and also for operatively disconnecting the shaft 39 from the driving shaft."

The following analysis of this claim made by Mr. McElroy, plaintiff's expert, is here adopted as satisfactory:

(Tr., p. 44.)

"The structure is defined at the beginning of the claim as 'a gearing device of the class described,' and

*It appears from the testimony of defendant's witness, White, that defendant also put a non-infringing machine on the market before it added the Phillips improvement embodied in the machine now complained of. (Tr., p. 141, Q. 33.) After Phillips had shown the way, others were quick to follow.

the claim then goes on to define the various elements or rather to enumerate the various elements going to make up the combination in the claim and the first of these elements is 'a support.' This support is the tub 10 and the lid 11, pivoted on the tub. The next element is 'a power shaft mounted on the support'; that element is the continuously rotating power shaft 15.

The next element of the claim is 'means for imparting a continuous rotary motion to the power shaft,' which of course would be the motor 23 which is connected up by the operating pinion 22 and the belt 21, with the large belt wheel 20, which is connected by the spur gear pinion 17 with the spur gear wheel 16, secured on the outer end of the power shaft 15.

The next element is 'an upright shaft 45 mounted in the support;' this upright shaft 45 is the dolly shaft which is vertical—that is to say—upright, and is journaled in the lid 11, which is thus denominated as a part of the support set out in the first element of the claim.

The next element is 'a driving device for the upright shaft, operatively connected with the power shaft and capable of imparting an alternating rotary motion to the upright shaft.' This of course is the train of gearing between the horizontal shaft 45 which I pointed out as consisting of the spur gear pinion 40, meshing with the spur gear wheel 44, connected by the pitman 48 with the rack bar 47, meshing with the spur gear pinion 46 secured on the upper end of the dolly shaft, and as will be seen by rotating the power shaft here, these connections serve to impart 'an alternating rotary motion to the upright shaft.'

The next element of the claim is 'a horizontal shaft 39;' this horizontal shaft 39 is the shaft on which the lower wringer roll is secured.

The next element of the claim is 'a driving mechanism for the shaft 39, connected with the power shaft and capable of imparting a rotary motion to the shaft 39.' That of course has reference to the connections between the horizontal power shaft 15 and the wringer shaft 39, and those connections include the mitre gear

15a, meshing with the mitre gears 26 and 27, one of which is clutched through the sleeve 29, with the shaft 24, having the sprocket pinion 36 on its outer end, connected by the sprocket chain 37, with the sprocket wheel 38 on the outer end of the shaft 39.

The next element of the claim is 'a controlling means applied to the driving device for the shaft 39, for reversing the movement thereof, and also for operatively disconnecting the shaft 39 from the driving shaft.' The controlling means may be said to begin with the handle 34 by which they are operated, and include the rock shaft 32 on which the handle is secured, which has the arm 33 engaging the annular groove 30 in the clutch sleeve 29, so that by swinging the handle, the clutch sleeve can be moved into any one of the three positions mentioned, one of which causes the wringer rolls to rotate in one direction, the intermediate position of which causes the rolls to be held from operation, that is to say, to be operatively disconnected from the drive shaft, and the third position of which causes the wringer rolls to rotate in the opposite direction from the first mentioned rotation."

It goes, without saying, that the elements enumerated in this claim include all of the necessary operative parts that go to make up the new combination of the Phillips invention by which the new functions, capabilities and results hereinabove enumerated are achieved.

THE DEFENDANT'S INFRINGING MACHINE.

The defendant's machine is illustrated in three drawings, marked "Plaintiff's Exhibit No. 15" (pp. 219, 220, 221), and is described and compared with the Phillips machine by Mr. McElroy, expert for plaintiff, as follows:

(Tr., p. 47.)

"(Q. 10) It will be perfectly obvious that defendant's machine is a washing machine of precisely the same type, i. e., a dolly type of washing machine, as the machine of the patent in suit. You have the same tub, ribbed at the bottom and on the sides, and you have the same lid 11 hinged to one side, and you have the same vertical dolly shaft 45 which is journaled in the lid and is provided with the same dolly head, adapted to slide up and down on the shaft and to engage with the clothes as the machine is operated. I might say that in using these reference numerals, I am referring to the reference numerals which I have placed on drawings illustrating the defendant's machine. You will also find a small electric motor 23 mounted beneath the tub in the same position as on the machine of the patent in suit and there is a belt 21 connecting a small pulley 22 on the armature shaft of the motor 23, with the large belt wheel 20; by rotating this large wheel slowly and watching the dolly shaft 45, you will see that the dolly shaft is swung back and forth through an angle of somewhere between 180 and 240 degrees; that is to say, somewhere between one half and three quarters of a turn between each reversal, and this is the same amount of rotation as is given to the dolly shaft of the machine in the patent in suit, so that we have the same sort of gearing in its function and general mode of operation between the belt wheel and the dolly shaft that we have in the machine of the patent in suit.

At the front of the machine there is a handle 34, which stands in one of three positions. When it is in its vertical position, the wringer rolls are not operated. When it is thrown down in one direction, the wringer rolls operate in one direction; when it is thrown over into the opposite position, the wringer rolls operate in the opposite direction, as the belt wheel is rotated, so that we have in this machine the same general type of connections between the belt wheel and the wringer rolls that we have in the patent in suit, that is to say, connections such that as the belt wheel is rotated con-

tinuously in one direction by the motor, the wringer rolls may be caused to stand still or rotate in one direction or rotate in the other direction, just as the necessities of the washing operation require.

I have pointed out the existence of the same general train of gears in the two machines, and I will now take up, say claim 6, and point out the specific elements going to make up the various elements.

Of course it will be perfectly apparent that this defendant's machine has 'a gearing device of the class described;' that is a gearing for the dolly shaft and the wringer rolls of this type of a washing machine. It undoubtedly has the first element, 'a support,' in the tub 10, and the lid 11 pivotally mounted on the tub so that it may be opened or closed as is necessary. It has the second element, 'a power shaft mounted on the support,' or the equivalent of it, in the hub 15 of the belt wheel and the associated hub of the spur gear pinion 40, which is rigidly secured to the belt wheel and in the hub of the mitre gear 15a which is also rigidly connected with the spur gear wheel 30. In other words, you have in this construction the hubs of three wheels—the belt wheel, the spur gear wheel 40, and the mitre gear 15a, made into one element to serve the purpose of the driving shaft of the structure of the patent in suit. That sleeve or hollow shaft 15 in defendant's machine is journaled on the bearing stub 14, so that the belt wheel with the connected spur gear wheel 40 and the connecting mitre gear 15a is free to rotate as the motor is operated.

This defendant's machine has also the third element, 'means for imparting a continuous rotary motion to the power shaft,' in the connections between the motor 23, which connections consist of the belt pulley 22, secured on the armature shaft of the motor, and connected by the belt 21 with the grooved belt wheel 20, the hub of which makes up part of the element 15, which I stated was the driving shaft or the equivalent of the driving shaft of the patent in suit.

Defendant's machine unquestionably has the fourth element of the claim, 'an upright shaft 45 mounted in the support,' in the dolly shaft 45 journaled in the support which is upright when the lid is closed.

Defendant's machine has the fifth element, 'a driving device for the upright shaft operatively connected with the power shaft and capable of imparting an alternating rotary motion to the upright shaft,' in the train of gearing interposed between the element 15 and the vertical dolly shaft 45. This train of gearing consists of the spur gear wheel 40 that I pointed out before as rigidly connected with the hub of the belt wheel and that spur gear wheel 40 meshes with the spur gear wheel 41 secured on the outer end of the horizontal shaft 43, the inner end of which has secured thereon the sprocket pinion 47, which sprocket pinion meshes with the teeth of the gear segment 46 which is splined on the vertical dolly shaft 45; it is splined on that shaft so that as the segment 46 is rotated and raised and lowered by the action of the cooperating pin 40, the dolly shaft 45 is merely swung back and forth without being raised and lowered, as it is not necessary to raise and lower the dolly shaft.

This gearing connection between the shaft 24 and the vertical dolly shaft 45 is an old and well known gearing connection and is the one covered by the famous Schroeder patent on a washing machine, that was involved in at least a dozen suits, and I think I testified in half a dozen of those suits on that patent, so that there is nothing new about this gearing; it is clearly performing its old and well known function in this place.

This defendant's machine has the sixth element, 'a horizontal shaft 39,' in the horizontal shaft 39 on which the lower wringer roll is secured.

This defendant's machine has the seventh element, 'a driving mechanism for the said shaft 39, connected with the power shaft and capable of imparting a rotary motion to the shaft 39,' in the following train of gearing: the mitre gear 15a, which I mentioned awhile ago

as secured on the hub of the belt wheel, meshes with another mitre gear 15b, which is secured on the adjacent end of the horizontal shaft 24 which is journaled in three bearings 25, carried by a bracket secured to the tub. This shaft 24 has rigidly secured on it two mitre gears 26 and 27, which of course correspond with the correspondingly numbered mitre gears of the patent in suit. Instead of having the clutch mechanism with clutch teeth, in this structure, we have a sliding sleeve 29, which is carried on the outer end of the small shaft 36a, or possibly I should say that the shaft carries the sleeve 29. This shaft has journaled on it a mitre gear 36, which is rotated with the spur gear 37, which meshes with the spur gear wheel 38, which is rigidly secured on the outer end of the lower wringer roll shaft 39. When the mitre gear 36 is in mesh with the mitre gear 26, the wringer rolls will rotate in one direction; when it is shifted to the opposite position, so as to be in mesh with the mitre gear 27, the wringer rolls will rotate in the opposite direction.

The defendant's machine also contains the final element, 'a controlling means applied to the driving device for the shaft 39, for reversing the movement thereof, and also for operatively disconnecting the shaft 39 from the operating shaft.'

I pointed out a while ago the handle 34 which is moved into any one of three positions, and the hub, if I may so style it, of this handle, has three flat surfaces on it, any one of which is adapted to cooperate with the flat top of a spring pressed plunger 35, so that the handle 34 will be automatically held in either one of the three positions; so that this spring pressed plunger acting on the handle corresponds in its function precisely with the three recessed rack on the machine of the patent in suit.

The handle 34 is rigidly secured on the end of a horizontal rock shaft 32 that extends under the wringer rolls and parallel to them, and the outer end of this shaft has a crank portion 33 that engages a slot 33a in a bell crank 30, which is journaled on the stub shaft

30a. This bell crank 30 has an aperture in its upper end through which passes the shaft 36a, secured to the sleeve 29, so that as we rotate the handle 34 the sleeve 29 will be slid, by the connections I have described, into either one of three positions so that the mitre gear 36 will engage with either of the mitre gears 26 or 27, or be in the neutral intermediate position in which it is out of engagement with either, in which the wringer rolls are at rest.

I believe that I have stated, in discussing the claims as applied to the machine of the patent in suit, that claim 6 was in a way the most limited of the lot and inasmuch as the defendant's machine has the elements of claim 6 it has the elements of claim 5, which is broader in that it does not require the intermediate position of the wringer rolls. It also has the combination of elements pointed out in claim 7, inasmuch as it has the final element, 'a hand lever for adjusting said controlling means' in the hand lever 34. It of course also has the elements of claim 8, inasmuch as the motor 23 is of course a 'prime mover carried by the support, for imparting an alternating continuous rotary motion to the power shaft.'

For the foregoing reasons, I am clearly of the opinion that defendant's machine contains each and every element enumerated in claims 5, 6, 7 and 8 of the Phillips patent in suit, in the same or a fully equivalent form, combined and co-operating in the same or a fully equivalent manner, for the same purposes and producing precisely the same results."

UTILITY AND EXTENT OF USE OF THE PHILLIPS INVENTION.

The machine of the Phillips patent was first put upon the market in September, 1908 (Tr., p. 21), by Thompson Brothers Company, then owner of the patent, and thereafter and from the year 1910 on, by the Grinnell Washing Machine Company, the present owner (Tr., p. 22). From the start, the machine was a success (Tr., p. 24), and others,

because of the favor with which it was received, began to imitate it and put out infringing machines, which called for extensive litigation of the patent, as has been hereinbefore pointed out. Large numbers of machines embodying the patented invention have been marketed by the plaintiff and its licensees, one of the latter, a former infringer, having paid \$1,500 for back royalties and royalties at the extent of \$5,000 a year since taking the license (Tr., pp. 36-37).

The patent is, therefore, not by any means a mere paper patent, but covers an invention that has been successfully marketed by the plaintiff and its licensees for many years and that has filled a want not supplied by any previous machine. Where the patent has not been acquiesced in it has been enforced, and but for the decision of the Circuit Court of Appeals for the Seventh Circuit here sought to be reviewed, would have been doubtless, by this time, universally respected. As the patent appears to be for a true combination that is new and useful, and not for a mere aggregation of old instrumentalities that work out their old functions in their old ways, without producing any new function or new beneficial result, we ask that the decree of the Circuit Court of Appeals be reversed and that the decree of the District Court be reinstated and affirmed.

MELVILLE CHURCH,
Counsel for Petitioner.

March 8, 1918.

Office Supreme Court, U. S.
FILED

APR 8 1918

JAMES B. WAHER,
CLERK.

No. 272.

IN THE
Supreme Court of the United States.

OCTOBER TERM, A. D. 1917.

GRINNELL WASHING MACHINE COMPANY,
Petitioner,

vs.

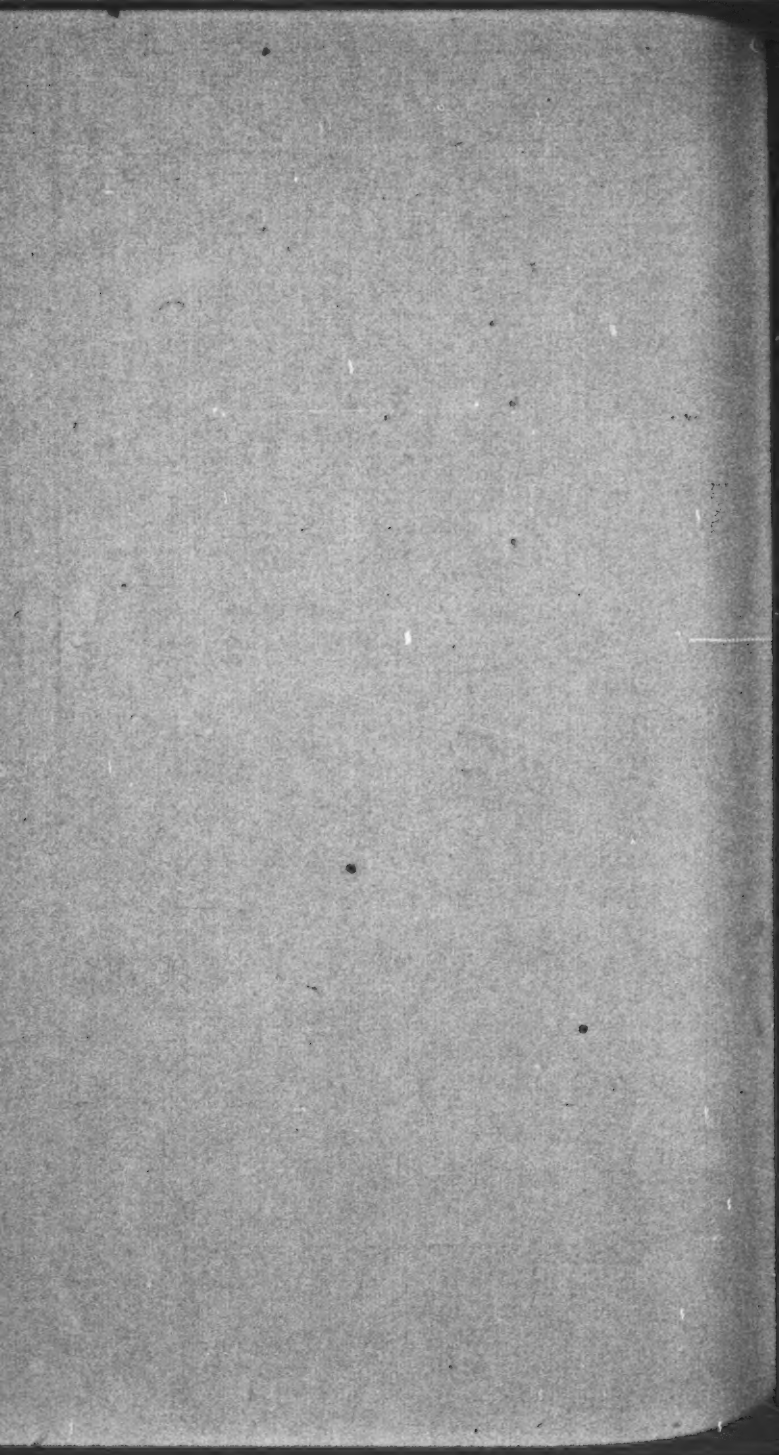
E. E. JOHNSON COMPANY,
Respondent.

ON WRIT OF CERTIORARI TO THE UNITED STATES CIRCUIT COURT
OF APPEALS FOR THE SEVENTH CIRCUIT.

BRIEF FOR RESPONDENT.

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MAY IT PLEASE THE COURT:

While the petitioner has in the main stated the facts, except in certain particulars that will be specifically mentioned, the brief does not present the prior art as fully as it should be presented. The short history of the "Washing and Wringing Art" (Pet. Br., 3-7) is apt to be misleading.

The Phillips patent in suit relates to a "Gearing Device," as correctly stated by counsel for petitioner. It was particularly intended for application to drive a domestic washing and wringing machine of a well known and familiar kind. The convenience and advantages of the washing and wringing ma-

chine to which it was applied, however, are not to be confused with or predicated upon the *gearing device*, which is the subject matter of the patent.

It has been long impossible (from time prior to the Phillips patent) to obtain a patent on a washing machine or wringing machine or on the two combined, by making even a *novel* gearing, a part of a combination which includes one or the other. The Patent Office has rightfully adopted the position that where the novelty is in the gearing device, that and that only may be the subject of the patent. This necessarily so, because, while the gearing device may be primarily intended to drive a washing machine and wringer, it may equally be used to drive other machines requiring the same sort of driven movement.

It is thus well to emphasize at the outset that the patent is for an alleged novel *gearing device*. Not a novel washing machine. Not a novel wringing machine. Not even a novel combination or association of a washing machine and wringing machine on the same tub.

DEFENSES.

In petitioner's brief (p. 3) it is alleged that "The course of the litigation * * * has practically eliminated all defenses save one, namely, the alleged inherent non-patentability of the invention, or as the English courts would say, the alleged lack of subject matter." What exactly is meant by this is not clear. Reference to it might have been spared, had it not been that by reason of this premise, the petitioner found scant reference to the prior art required for its purposes. The burden in this respect is thus placed on the respondent.

So far as the defenses are concerned, it will suffice to say that the errors assigned below were in substance that the District Court erred in not holding the patent invalid because (a) of aggregation, (b) of non-patentable subject matter or non-invention, (c) of anticipation; or in not so limiting

the scope of the claims in suit as to differentiate them from the respondent's construction.

The Court of Appeals of the Seventh Circuit found it necessary to consider only the question of aggregation and held the patent invalid on that ground.

PATENT IN SUIT.

The patent in suit, we repeat, relates to a "*gearing device*" and is shown and described in the patent (R., 228) as applied to the operation of a power driven washing machine and wringer. The washing machine shown in the patent is what is known as the agitator or dolly type. Such a washing machine consists of a tub with a top, part of which is rigid and part of which is hinged to form a lid which may be opened to give access to the interior of the tub. An upright shaft depending into the tub is journaled in the lid and is movable therewith when the lid is opened. The shaft carries an agitator or, as known to the trade, a dolly, consisting of a wooden disc having three or more angularly disposed depending fingers which engaged the clothes in the tub. An alternating rotary movement is imparted to the shaft carrying the dolly in order to swing the clothes, first in one direction and then in the other, through the water contained in the tub. To impart this motion a pinion is fixed to the dolly shaft above the lid of the tub and said pinion is oscillated first in one direction and then in the other by a suitable gearing to give it the required *alternating rotary motion*. The *amplitude* of this movement is generally from $\frac{5}{8}$ to $\frac{3}{4}$ of a revolution.

The dolly type of washing machine is, in this respect, generally different from another equally well known type of washing machine called herein a cylinder or drum washing machine. In this type of machine the swish or movement of the clothes through the soapy water is brought about by means of a rotary cylinder or drum which contains the clothes and which is rapidly rotated first in one direction and then in

the opposite direction in another larger tub, which is the container for the soapy water. In this type of machine, where the clothes are not so directly engaged by the rotating member as in the case of the dolly type of machine, a larger number of rotations is usually imparted to the alternating rotating member before reversal, since some time is required before the clothes contained in the rotating receptacle acquire the movement of the said receptacle. This, however, is largely a matter of practice and in some of the machines, at least, one of them now on the market, less than a complete revolution (in fact, less than $\frac{1}{2}$ of a complete revolution) is imparted to the rotary drum before it is reversed. (See Upton R., 127.)

In both types of washing machines, the operating gearing is designed to impart an *alternating rotary* motion to the actuating member of the washing machine, whether it be the agitator of the dolly type of machine or the drum or cylinder of the drum machine. The end aimed at in each case is to force the soapy water through the clothes and in each case the moving member is designed to impart such motion to the clothes as to force the water through them.

The washing machine shown in connection with the gearing device of the Phillips patent in suit is of the *dolly type*, and the gearing shown in the said patent is more specifically designed and described for such a washing machine. The petitioner's expert has limited or attempted to limit the claims of the patent in suit to a gearing device for a dolly washing machine *only*, but the patent specification is not so limited. The limitation was made necessary by reason of a certain English patent (Shedlock, R., 248) of the prior art, which compelled the owners of the patent at the time to give up any hope of holding up the manufacturers of the cylinder or drum type of washing machine, even if their washing machines be provided with the identical gearing of the Phillips patent.

The patent in suit illustrates and describes the familiar

dolly type of washing machine above referred to, with a wringer arranged at one side so as to be in position for wringing the clothes that have been washed in the tub, into a receptacle disposed of at one side of the tub. These parts comprise the *washing machine* and the *wringer machine* illustrated and described as to be operated by the "*gearing device*" described and claimed in the patent in suit.

Both the gearing of the washing machine and the gearing of the wringer are driven by a common drive shaft which itself is operated by a motor supported on the legs of the tub of the washing machine. The tub is referred to in the drawings by the number 10 and the motor by the number 23. The tub constitutes the common support not only for the washing machine (which includes the tub, the dolly-shaft and the dolly) and for the wringer, as in the familiar hand operated washing machine, but also a support for the motor and for the common drive shaft of the washing machine and wringer.

As is well known, a motor of the kind to be used with any apparatus requiring small power, has a high speed which must be reduced in order that it may accommodate the comparatively slower rate of movement required in a washing machine or wringer. The motor is therefore shown in the patent with the small pulley wheel 22 on its armature shaft connected by a belt to a comparatively large pulley wheel 20 (See Figure 1), which pulley wheel is of about the diameter of the usual hand wheel or fly-wheel of a dolly washing machine.

The said wheel 20 is rotatably mounted on a stud extending laterally from the side of the tub 10 of the washing machine and a pinion 17, fixed to the hub of the fly wheel, is engaged with a large gear 16 that is fixed to a horizontal shaft 15 journaled on a fixed part of the top of the tub of the washing machine. This shaft 15 is the common drive shaft for the washing machine gearing and for the wringer gearing.

As shown in the Phillips patent, the drive shaft 15 is ar-

ranged in parallelism with the hinges of the lid of the tub and a small spur gear 40 on said shaft is engaged with a larger spur gear 44 journaled on the hinged lid of the tub and operatively connected with the dolly shaft so that when the hinged lid is opened, the large gear will be swung from operative engagement with the spur gear 40 (as shown by dotted lines in Figure 4) to a position where it is not operatively engaged therewith, (as shown by full lines in Figure 4). By this construction and arrangement of the gearing the drive shaft 15 may continue to operate without operating the gear 44 that operates the dolly shaft of the washing machine, when the lid of the washing machine is raised to get at the clothes in the tub of the washing machine.

The gear 44 is connected with the dolly shaft of the washing machine in a familiar manner to impart to it the usual *alternating rotary motion*. In the drawings of the patent is shown a pinion 46 fixed to the top of the dolly shaft 45 and a longitudinally reciprocating rack 47 engaged therewith, together with a pitman connected to a crank pin on the large gear 44 for imparting a reciprocating motion to the said rack bar.

A familiar form of gearing is adopted for driving the wringer from the drive shaft 15. In addition a *reverse* gearing is included so that the wringer rolls may be run either in one direction or the other just as when the wringer is operated by hand. The patent shows the familiar reverse gearing (Mechanical Movement No. 53, R. 226) comprising a transverse shaft 24 upon which are loosely mounted opposed beveled gears 26, 27, a clutch device 29 feathered on the shaft 24 and capable of operative engagement with clutch faces on the gears 26, 27 and an intermediate driving gear 15a fixed to the drive shaft 15 and in mesh with the aforesaid gears 26, 27. The transverse shaft 24 is connected by sprocket wheels and chains (36, 37, 38) to one of the wringer shafts 39. The clutch device 29 is shifted to any one of its three positions (that is to say neutral position or engaging posi-

tions with either of the gears 26, 27) by means of an arm 33 (see Figures 2 and 7) fixed on a rock shaft 32 and adapted to be actuated by an arm or hand lever 34 placed at one side of the tub. A notched plate 35 provides means for locking the arm 34 to hold the clutch sleeve in any one of its three positions.

The claims of the Phillips patent sued on are 5 to 8, inclusive. They need not be quoted here, but will be found in the Record at pages 232, 233.

It will be noted that these claims differ from each other very slightly. Claim 6, the one selected as typical by the petitioner, differs from the other claims merely in the fact that it more specifically describes the controlling means for reversing the wringer, as it provides that said controlling means shall be capable of *disconnecting* the wringer shaft from the driving shaft, whereas Claim 5 for example merely provides for the reversal.

It is manifest that all of these claims are drawn to a GEARING DEVICE and are not in any way limited to a washing machine whether of the dolly or of any other type. It is true that each claim begins with the words "A gearing device of the class described," and complainant's expert expresses the opinion that this phrase is intended to and does limit the claims to a combination of elements in which is included the tub and dolly of a *dolly washing machine* and a *dolly shaft* carried by the hinged tub-lid of such a washing machine.

The words "of the class described" mean and can only mean *a gearing device of THE CLASS OF GEARING DEVICES described.* While it may be true that Phillips intended his "gearing device" primarily to be used with washing machines, he did not so limit its use by anything to be found in his patent and, we doubt not that he would be very keen to insist that a Chinese copy of his "gearing device" if used on some other machine, was an infringement of his patent. If his patent be valid, we have no doubt the courts should come to his aid in such circumstances by restraining such infringement.

"The object of my invention is to provide a gearing device of simple, durable and inexpensive construction, especially designed for use in operating washing machines and wringers, by means of power applied by an electric motor or other source of power.

A further object is to provide a device of this kind in which all of the operative parts are arranged in compact form, and may be quickly and easily applied to *any* of the ordinary machines *of the class described.*" (Italics ours.) (Phillips Pat., p. 1, lines 8 to 19.)

Thus it appears that the inventor by the words "of the class described" intended to refer not only to gearing devices of the *class* of gearing devices described but also to such gearing devices when applied to all washing machines *generally*. Clearly these words, in the second paragraph quoted, refer to the words in the preceding paragraph where he says that his invention is to "provide a gearing device * * * especially designed for use in operating washing machines and wringers," without any limitation as to the kind or type of washing machine.

Evidence adduced in support of the patent attempts to support the argument that the Phillips patent covers any and all washing machines of the agitator type or class, no matter what their specific mechanical devices may be, when combined with a power operated reversing wringer machine, no matter what its specific mechanical devices may be, provided both machines are mounted upon a common support and actuated from the same drive shaft.

If this construction be placed upon the Phillips patent no manufacturer of any form of power driven *dolly* washing machines may hereafter use any kind of a reversing wringing device without first paying tribute or royalty to the petitioner.

RESPONDENT'S GEARING DEVICE.

The respondent's gearing device is applied to drive a dolly washing machine and the wringer mounted on the tub thereof, as in the case of the gearing device of the Phillips

patent in suit. An electric motor mounted on the tub is used to drive the gearing device and the gearing device contains a reversing mechanism to run the wringer in either direction, or to stop it, so that it will stand idle. When this is said and done all similarity between the gearing device of the patent in suit and that of the defendant ends.

The defendant's gearing device is shown physically embodied in "Complainant's Exhibit No. 9, Defendant's Infringing Machine," and is illustrated in the drawings marked Complainant's Exhibit No. 15, Sheets Nos. 1, 2 and 3, (R. 219-220-221). The drawings of the exhibit are marked with numerals applied by Mr. McElroy to parts which he considered equivalent to like parts in the gearing device of the patent in suit and although we do not agree with Mr. McElroy, in order to save confusion, we have used the same numerals without any admission of the equivalency set up by him.

The washing machine tub is indicated by 10 and the lid by 11, in this case as before, and a dolly shaft 45 is suspended from the lid. The wringer in the case of the defendant's machine is not placed on the tub at the right as in the case of the washing machine illustrated in the Phillips patent, but is placed in front of the machine, if we regard the hinge line as the rear, as we regarded it in the case of the Phillips patent, with the axes of the wringer rolls parallel to the axis of the hinge of the lid. A motor 23 mounted below the body of the tub has a small pulley 22 on its armature shaft connected by a belt 21 to a large pulley wheel 20, which is fixed on a stud shaft 14 mounted on the side of the tub. A gear 15 is fixed to the fly wheel concentrically with its rotative axis, said gear being made in two parts, part of which is a spur gear, and the other part of which is a bevel gear. The spur part of the gear, which Mr. McElroy has lettered 40, is enmesh with a spur gear 41 on a shaft 43, which is mounted on the top of the tub lid and which has a gear 47 at its inner end engaged with a member 44 on the shaft 45 in such manner as to impart an alternating rotary motion to the said shaft

45. When the lid is raised, the gear 41 is lifted from its engagement with the spur part 40 of the gear 15 so that the washing machine mechanism ceases to operate, although the gear 15 may continue to rotate.

The bevel part 15^a of the gear 15 engages with a bevel pinion 15^b which is fixed on a counter shaft 24 that extends at right angles to the shaft 43 and into the neighborhood of the wringer. At that point there is provided on the shaft 24 oppositely facing bevel gears 26, 27, either of which is adapted to be engaged by a gear which has bevel parts 36 and a spur part 37. The spur part 37 engages with a large gear 38 on one of the wringer roll shafts 39. Manifestly the shaft 39 will be operated in one direction or the other, depending upon which of the bevel pinions 26, 27, is engaged by the bevel gear part 36, or will be idle when neither of said bevel pinions engage the bevel pinion 36.

An arm 34 operates the gear 36-37, in a familiar manner to bring it to engage either of the bevel gears 26, 27 or to place it in neutral position and a suitable device is employed for locking this arm in any one of its three positions.

PRIOR ART.

Before taking up a discussion of the Prior Art, it will be of interest to the court to call attention to general facts in connection with machinery and machine shop practice which will be of assistance in arriving at a proper conclusion in this case. Said facts were substantially admitted by petitioner's expert, and are, probably, also quite familiar to the court.

FAMILIAR SHOP PRACTICE.

It has been the custom for many years to provide in a machine shop what is known as a *line shaft*, generally running the length of the shop, supported in bracket bearings depending from the ceiling, and driven directly from whatever source

of power is used in the shop, such as an electric motor, a steam engine, gasoline engine, or the like. The various machines that are used in the shop, such for example, as planing machines, milling machines, tapping machines, drilling machines, grinding machines and the like, are all fixed to the floor of the room in which the *line shaft* is located and the *operating shaft of each machine* is operatively connected, usually by belts and pulleys, to this main *line shaft*.

The various machines in the shop operated from this main *line* or *drive shaft* may all be the same or they may be different kinds of machines adapted for different sorts of work—but they are all driven by the one main *line shaft* which is the *common drive shaft* for operating each of the machines.

As all of the machines *may or may not be in use at the same time*, suitable mechanism is provided between the *line shaft* and each machine for operatively connecting and disconnecting each machine with the *line shaft*. Such mechanism usually consists of the familiar fixed and loose pulleys placed on the operating shaft of each machine, so that when the belt is shifted to the loose pulley the machine will not be operated, and when it is shifted to the fixed pulley, the machine will be operated. Instead of the fixed and loose pulleys, in some cases, clutch devices are used, such as that embodied in the washing machine involved in the prior case against Woodrow *et al.*, and offered in evidence in this case as Complainant's Exhibit No. 10, Automatic Electric Washing Machine. In said machine the power or drive shaft may be operatively connected or disconnected from either the *washing machine* or the *wringer machine*.

The various machines in the shop operated by the *line shaft* may each operate upon different work pieces to do different work, as for example, where one machine makes nuts, another makes bolts, another machine mills surfaces and so on, and no two machines may operate on the same work piece to produce the finished article. Again two or more machines driven from the common *line shaft* may operate in succession on the same

work piece to produce the finished article—as for example, where the work piece is first put into a milling machine and is then taken from that machine and put into a drilling machine, and so on.

The machines, manifestly, are absolutely independent of each other so far as the particular work that each does is concerned. The several machines have nothing in common except that they are all on the same support, namely, the floor of the room in which they are located, and they all have a common *line* or *drive shaft* operated from the power room of the machine shop. And there is no co-action or co-operation between the several machines even though they have a common support and a common *line* or *drive shaft*. All operate in exactly the same manner as they would operate if driven from separate and distinct sources of power and if placed each in a different and separate building.

In this respect, the several machines in a machine shop driven by a common *line* or *drive shaft*, are identical with the two machines, namely, the *washing machine* and the *wringer machine*, in the structure shown in the patent in suit.

In the machine of the Phillips patent there is a common *line* or *drive shaft* which is operatively connected on the one hand to the *washing machine*, comprising the tub, the dolly, the dolly shaft and the mechanism for imparting the required alternating, rotary motion to the dolly shaft for washing the work piece, that is, the clothes; and operatively connected on the other hand, to a *wringer machine*, comprising the wringer frame on the tub, the wringer rolls, the drive mechanism for said rolls, the reversing gearing and the controlling device whereby said *wringer machine* may be operated in either direction to wring out the work piece, that is, the wet clothes. Both of these machines are mounted on the same support, that is, the *wooden tub*.

The work done by the *washing machine* has absolutely no connection whatever with the work done by the *wringer ma-*

chine, although the *washing machine* and the *wringer machine* may be caused to operate successively on the same work piece, that is to say, the clothes. The two machines of the Phillips patent are not adapted to and in fact cannot operate *simultaneously* upon the *same* piece of work, however—just as in the case of a milling machine and a boring machine placed alongside of each other in the same shop. Whether they are on the same *support*, or whether they are operated by the same *line* or *drive shaft*, in no ways affects the result.

As in the case of the machines in the machine shop, the *washing machine* and the *wringer machine* have nothing in common but a common *drive shaft* and a common *support*, namely, the structure forming the tub. In the defendant's device, the *wringer machine* may be used without operating the *washing machine* at all, if the lid be raised, but not otherwise, while the *washing machine* may be used without operating the *wringer machine*, exactly in the same way as each of two machines driven by a common *line shaft* in a machine shop may be used without using the other.

Mr. McElroy, the petitioner's expert, laid great stress on the fact that, in the alternating, rotary motion imparted to the *washing machine shaft by the gearing disclosed in the patent in suit*, the *washing machine* DOLLY SHAFT IS ROTATED through LESS THAN A COMPLETE REVOLUTION before it is reversed. He gave it as his opinion that the claims were limited to a gearing in which the amplitude of the oscillation of the washing machine shaft is about *two-thirds of a full revolution*.

The amplitude of the rotary oscillation of the dolly shaft disclosed in the patent in suit has absolutely nothing to do with the operation of the wringer machine, and the latter would operate in precisely the same way whether the washing machine shaft is oscillated through a half revolution, a whole revolution or ten revolutions before reversal. This is necessarily so since neither machine, the *washing machine* or

the *wringer machine*, has any thing whatever to do with the operation of the other machine. Each will operate in just the same way whether the other is operated or not and whether the other is present or not.

Mr. McElroy was himself compelled to admit this. His answer to X-Q. 66 in his *prima facie* testimony is of interest in this connection. (R. 66.)

"X-Q. 66. Is there any co-action whatever between the washing machine as such and the wringing machine as such, or any co-operation between them?"

A. I think there is. You can use both at the same time, you can be washing one batch of clothes while you are wringing out another batch in the course of the same operation of doing a family washing."

See also X-Q. 67 to X-Q. 76, inclusive; R. 66-69.

The same co-action is manifestly present in the case of two machines in a machine shop driven from a common drive shaft. Manifestly, if there is not power sufficient to actuate the drive shaft to efficiently drive both machines, neither could be driven if they were both operatively connected to the line shaft at the same time.

The kind of *co-action* referred to by Mr. McElroy is the same *co-action* that exists in the case of two *independent machines* placed side by side on the floor or on a power table in a machine shop, each driven from the same line shaft and each adapted to operate successively on the same work piece, as in the case of the milling machine and the boring machine already referred to. Thus, Mr. Elroy's statements amount to an admission that there is no interaction, co-action or co-operation between the wringer machine and the washing machines—that the operation of the one is in no way affected by or dependent upon the operation of the other.

However, Mr. McElroy was so determined to limit the alleged invention of the patent in suit to the dolly type of washing machine; he was so persuaded of the necessity of importing into the claims in suit some limitation to save them from

anticipation—that he was compelled even when questioned about a construction involving almost the *identical* gearing shown and described in the Phillips patent in suit, but *capable of imparting to the dolly shaft an alternating rotary motion* of more than a complete revolution before reversal, to state that in his opinion such a gearing was not responsive to or covered by the claims in issue in this case. In other words that such a construction would not infringe the claims in issue.

Attention is here called to Defendant's Exhibit No. 4. This is a drawing showing a *dolly type* of washing machine provided with the gearing of the patent in suit. The drawing is a top plan view like Figure 2 of the patent in suit.

DEFENDANT'S EXHIBIT No. 4. (Rec. p. 222.)

In this drawing, every bit of the gearing is exactly reproduced from that shown in the patent in suit with the exception that in place of the rack bar 47 being arranged to engage the pinion 46 at the top of the dolly shaft, said rack bar engages a small pinion 45^x placed at one side of the dolly shaft and made rigid with an internal gear 45^y which directly engages the pinion 46. Thus there is interposed between the reciprocating rack bar and the pinion at the top of the dolly shaft, an intermediate gear which is adapted to rotate the dolly shaft through an amplitude four or five times greater than the amplitude that the dolly shaft of the usual dolly washing machine is designed to operate.

It is to be noted in this connection that the reciprocating rack bar in defendant's machine in the Newton case, Complainant's Exhibit No. 11, does not directly engage the pinion at the upper end of the dolly shaft but engages an intermediate gear which in turn engages the pinion on the dolly shaft. In the Newton machine, this intermediate gearing is such that the dolly shaft will only oscillate through an amplitude of less than one revolution. In the gearing of Exhibit No. 4, the

intermediate gearing is so arranged as to operate the dolly shaft through a greater amplitude of oscillation. *This is a matter of mechanics.* No more, no less. And yet, Mr. McElroy states that *the gearing shown in Exhibit No. 4 does not respond to the claims in issue* while, at the same time, he contended that the Newton machine did respond to the claims. The only reason that he could give for declaring that the machine shown in Defendant's Exhibit No. 4 is not responsive to the claims in issue, was that no one would ever want to impart to the dolly shaft of a dolly washing machine such an amplitude of rotary oscillation as would be brought about by the gearing shown in Exhibit No. 4. This is manifestly a *reductio ad absurdum*.

If the gearing shown in the drawing Exhibit No. 4 is old (and if it were not Mr. McElroy would not have taken this position), it is ridiculous to contend that the claims in issue may be saved by importing into them the degree of amplitude of oscillation of the shaft 45 (the dolly shaft). *It is well recognized by all authorities that differences of degree are not patentable.* And yet this is the sole difference between the gearing shown in the patent in suit and in Exhibit No. 4.

"That which infringes, if later, will anticipate if earlier" is a well known canon of patent law. Mr. McElroy would therefore and for the same reason be compelled to deny that the gearing shown in Exhibit No. 4 anticipates the claims in issue. *But this court would assuredly not follow him.*

In considering the prior art we shall refer to only a few patents, merely for the purpose of illustrating and emphasizing the admitted facts. These patents have been fully described and discussed by respondent's expert, Prof. Kinealy. (R. 152 et seq.)

PRIOR PATENTS.

MADISON PATENT No. 57,348, AUGUST 21, 1866.

Prof. Kinealy cited this patent (R. 234) merely to show a washing machine of the *dolly* or *agitator type* in which the dolly is operated by means of a reciprocating rack-bar actuated by a pitman and crank from a drive-shaft mounted on the top of the tub. The drive-shaft C is hand driven and is connected by a crank-pin 1¹ and a pitman D to the horizontally reciprocating rack-bar F which engages a pinion S on top of the dolly shaft. The gearing shown in this old washing machine is such that a continuous rotary movement of the drive shaft C acts to impart an alternating rotary motion to the dolly shaft carried by the lid of a washing machine tub.

This Madison patent is material as disclosing that part of the gearing of the Phillips patent-in-suit which operates the washing machine and which includes the drive-shaft 15, the reciprocating rack-bar 47 for oscillating the dolly and the intermediate connecting mechanism by means of which the rotary movement of the drive-shaft is converted into a reciprocating movement of the rack-bar. *Manifestly the drive-shaft of the Madison patent might be driven by a motor instead of by hand-power.*

KAINER PATENT No. 699,185, MAY 6, 1902.

Referring to the Kainer patent (R. 241), it will be seen that it has a horizontal drive-shaft C which is adapted to be continuously rotated by means of a hand-wheel C¹. There is a beveled gear C² fixed on the drive-shaft C and meshing with a horizontal bevel gear F rotatively mounted on the hinged lid of the tub. This large bevel gear carries a crank-pin which is operatively connected to reciprocate a rack-bar H that engages a pinion e on the top of the dolly-shaft.

As pointed out by Prof. Kinealy, the drive-shaft C corresponds to the drive-shaft 15 of the Phillips patent; the beveled

pinion C², to the pinion 40 of the Phillips patent; the large bevel gear F, to the large gear 44 on the lid of the tub in the Phillips patent and the rack-bar H and its connections to the gear, correspond to the rack-bar 47 and its connections to the gear 44.

In the Kainer patent as in the Phillips patent-in-suit, the *large gear is disengaged* from the small gear or pinion on the drive-shaft *when the lid is raised* to give access to the interior of the tub, so that a continuous rotation of the drive-shaft will be inoperative to drive the dolly shaft when the tub lid is raised.

Thus in the Madison and the Kainer patents we have disclosed in a washing machine of the *dolly type*, a horizontal shaft on or at the top of the tub with interposed mechanism between said shaft and the dolly-shaft for imparting an *alternating rotary motion to said dolly-shaft of the amplitude required in a dolly washing machine*.

BROSI PATENT No. 750,243, JANUARY 19, 1904.

This patent (R. 245) shows a well-known gearing for operating the dolly shaft of a dolly washing machine similar to that used by the defendant. The gearing comprises (quoting Prof. Kinealy, A. 155, 156), "a band wheel or power wheel y, mounted on a power shaft x. This power shaft x carries on its inner end a spur pinion X¹ shown in Figure 2 and in this figure it is marked X, although in the specification it is referred to as X¹.

"The pinion a¹ is mounted on a horizontal shaft a which carries at its inner end a star wheel or pinion i. The star wheel i engages with the segmental rack which is mounted on the upper end of the dolly shaft d. As a matter of fact, there are two racks marked respectively g and h, and the pinion i works between them in such a way that as the shaft a is made to revolve, an alternating rotary motion is given to the dolly shaft d. This mechanism of the Brosi patent is very similar

indeed in appearance and in operation to the mechanism of the defendant's machine, whereby motion is transmitted to the vertical dolly shaft. The operating wheel y of the Brosi patent corresponds to the band wheel 20 of the defendant's machine, the pinion x¹ formed on the fly wheel stub shaft of the Brosi patent corresponds to the pinion 17 formed on the hub of the fly wheel of the defendant's machine. The pinion a¹ corresponds to the pinion mounted on the outer end of the horizontal shaft of the defendant's machine and the shaft a of the Brosi machine corresponds to the horizontal shaft of the defendant's machine.

"The translating mechanism of the Brosi machine is somewhat different from the controlling mechanism of the defendant's machine in its details, but in general this method of operation is the same as that of the defendant's. In both devices there is a wheel or pinion wheel mounted on the end of a horizontal shaft that engages with a segmental rack mounted on and carried by the vertical dolly shaft."

WILLOCK PATENT No. 708,444, DECEMBER 2, 1902,

This patent (R. 251) discloses a mechanism, quite similar to the wringer operating mechanism shown in the Phillips patent, used in connection with a washing machine of the *cylinder* type; and it drives or rotates the operating shaft first in one direction and then drives it in the opposite direction. This mechanism is best seen in Figure 2.

10^b indicates a horizontal drive shaft which is continuously rotated in the same direction through intermeshing gears, 10^c, 10^a, by means of a motor 4. The shaft 10^b carries a beveled gear 10^a which is placed between and adapted to engage with one or the other of two beveled gears 2^b, 2^c, which are loosely mounted on a horizontal shaft 3 arranged at right angles to and in the same plane with the drive-shaft 10^b. The shaft 3 is provided with a small gear 19 which engages a large gear 20 on the operating shaft of the barrel or drum.

A clutch member 6^a is slidably mounted on the shaft 3 in between the loosely mounted beveled gears 2^b, 2^c, and is adapted to operatively engage either one or the other in such fashion as to drive the shaft 3 continuously first in one direction and then continuously in the opposite direction. In the structure shown in this patent there is provided an automatic control for the sliding clutch member 6^a, whereby this reversal of the rotation of the shaft 3 takes place periodically.

This reversing device could, manifestly, be manually controlled instead of automatically controlled, without modifying the construction or the mode of operation of the reversing device or altering the function of any of its elements. Whether its sliding clutch be moved automatically or by hand is, clearly, a matter of choice, and would depend entirely upon the shaft or tool one wanted to reverse by the use of this device.

Manifestly, the clutch 6^a might be shifted by a hand operated lever if the shaft 3 was intended to drive a wringer, as in the case of the gearing shown in the Phillips patent-in-suit, in which case the shaft 3 could be allowed to rotate continuously in one direction as long as was necessary, or it could be rotated in the opposite direction when desired, or the clutch could be placed in an inoperative intermediate position, that is to say, in the position as it appears in the drawing, when the shaft would not be rotated in either direction.

The particular clutch shown in the Phillips patent is the well-known clutch collar or hub provided at its opposite ends with clutch-teeth adapted for engagement with like clutch-teeth on the two loose gears. Such mechanism is shown in the movement No. 53 of "507 Mechanical Movements" (edited by Henry T. Brown, copyrighted in 1868), a copy of which is shown on an enlarged scale in the drawing, Defendant's Exhibit No. 14 (R. 226). Manifestly this clutch could be readily substituted for the clutch of the Willock patent by any mechanic without the exercise of any inventive ingenuity and merely by the application of his "ordinary powers of reason-

ing" and the "expected skill of his calling." Were this done, we would have the two shafts 10^b, and the drive-shaft 3, connected in identically the same way and by the same reverse gearing and operated by the same controlling means as that disclosed in the Phillips patent.

With these three patents referred to and with Mechanical Movement No. 53 before him, Phillips had all that was necessary in order to construct the gearing device disclosed in the patent-in-suit. What he did may have been good judgment and selective skill but it was not an act of invention. In order to illustrate this we here call attention to the drawing, Defendant's Exhibit No. 5. (R. 223.)

As already pointed out, the Madison and the Kainer patents disclose horizontal drive-shafts at or on top of the tub of a washing machine with gearing quite similar to that shown in the Phillips patent for operatively connecting the drive-shaft with the dolly-shaft. In Defendant's Exhibit No. 5 (which represents a plan view of the top of a washing machine provided with a wringer, similar to Figure 2 of the Phillips patent), we have shown so much of the mechanism as would thus be disclosed by the Madison or Kainer patents, separate and distinct on the top of the tub and adapted to be driven by a motor from the pulley 20. These parts include the drive-shaft 15, the small gear 40, the large gear 44, the pinion 46 at the top of the dolly-shaft, and operative connections between them.

In like manner in this drawing, we have shown a second drive-shaft 15^x arranged parallel to the drive-shaft 15, corresponding to the drive-shaft 10^b of the Willock patent and driven from a pulley 20^x by a second motor. This shaft is connected through reverse gearing to a shaft 24 at right angles to it and in the same plane, which shaft is operatively connected to a second shaft at right angles to the shaft 15^x like the drum shaft of the Willock patent. In placing this drive-shaft, reverse gearing and driven-shaft of the Willock patent

on the plan view of Defendant's Exhibit No. 5 we have substituted for the clutch and the automatic control shown in the Willock patent, the hand control and the clutch movement No. 53 shown in Defendant's Exhibit 14.

Thus with these changes which are manifestly those that the merest mechanic would make, we have in Exhibit No. 5, the two independent machines shown in the Phillips patent, namely, the washing machine and the mechanism for driving it and the wringer machine together with the mechanism for reversing it. The two gearing devices as shown in this figure are identical with the like gearing devices shown in the Phillips patent, with a single exception. They are both carried by the same *support*, namely, the structure forming the tub itself, but each has its own *drive-shaft actuated* by its own motor.

As correctly stated by Mr. McElroy, this machine showing the gearing of Madison or Kainer and the gearing of Willock with the substituted clutch of the Mechanical Movement No. 53, instead of Willock's friction clutch, both mounted on the tub but independently driven, does not respond to the claims of the Phillips patent-in-issue.

In Defendant's Exhibit No. 6 (R. 224), there is shown an exact reproduction of the gearing shown in Exhibit No. 5, with the exception that the two shafts 15^x (the shaft which drives the *wringer*) and the shaft 15 (the shaft which drives the *dolly*) are coupled together by means of a band so that the two may be driven from the same motor. The only change required to do this is the mere *mechanical change* of placing a pulley 21^y on the shaft 15 in line with the pulley 20^x so that a belt 21^x may be used to connect the two. This, manifestly, is the work of the merest mechanic, and yet this slight change brings the gearing shown in Exhibit No. 6 under the monopoly claimed in the Phillips patent, as was necessarily admitted by Mr. McElroy. (R. 63.)

The gearing shown in Exhibit No. 5, Mr. McElroy admitted,

was an aggregation, while he insisted that the construction shown in Exhibit No. 6 was "a combination"—by the word "combination" of course, meaning a patentable combination.

This position of Mr. McElroy seems to be inconceivable in view of the fact that it has been a widely known and a long recognized practice to drive two or more machines from a common drive shaft, as illustrated in the machine shop practice heretofore referred to.

In order to more clearly demonstrate to the court the weakness of Mr. McElroy's position, the court is referred to Defendant's Exhibit No. 7 (R. 225), which is exactly like Exhibit No. 6, except that instead of connecting the two shafts 15^x and 15 directly together, there is added a third intermediate shaft 15^z, operated directly from the motor. This shaft is connected by one set of belts and pulleys indicated at 15^w to the shaft 15^x and by another set of belts and pulleys indicated at 21^y, to the shaft 15.

Here we have even more clearly the exact situation to be found in the ordinary machine shop, the shaft 15^x being the same as the common line or drive shaft; the shaft 15 being the drive shaft of one machine, namely, the *washing machine*; the shaft 15^z, the drive shaft of the second machine, namely, the *wringer machine*; and both of said shafts being connected to the *common drive shaft* in such manner as to be driven thereby. This construction also, as Mr. McElroy necessarily admitted (R. p. 69), embodies the construction called for by the claims of the Phillips patent in suit, and while any mechanic having the problem before him of driving two machines on a washing machine tub from the same drive shaft would naturally eliminate at least two of the shafts for purposes of economy (X-Q. 74, R. 69), the illustration in this drawing emphasizes the fact of absolute independence and lack of co-operation between the two mechanisms driven by the gearing of the Phillips patent, that is to say, a *washing machine* on the one hand and a *wringer machine* on the other hand.

Thus, Mr. McElroy showed clearly when testifying that he recognized that it would amount to aggregation to drive one machine from a main shaft and drive a second different machine from the drive shaft of the first machine. He was, however, of the opinion that if the line shaft is on the tub of a washing machine and is connected to drive the *washing machine* gearing directly and if the said shaft, being the drive shaft of the *washing machine*, is connected to a drive shaft which operates a *wringer machine* on the same tub, in this case we have a patentable combination.

It is thought that this position is absolutely untenable, and that its weakness will be so manifested to the court that further comment is unnecessary.

WOODROW PATENT No. 921,915, MAY 11, 1909.

This patent (R. 274) discloses a *washing machine* of the *dolly type* and a *wringer machine* mounted on the tub structure of the washing machine, both driven from a common source of power, namely a motor carried by the tub structure. It does not show a reversing device for the wringer rolls, but when such a device was applied, the court in the first Iowa suit held the structure to be an infringement of the Phillips patent.

Detail description therefore is unnecessary, save to say that the Woodrow patent shows an agitator or dolly type of washing machine.

In this patent, then, and mounted upon a common support, is disclosed a *wringer machine* and a *washing machine*, both adapted to be driven from a *common line or drive shaft*. A clutch device is so arranged, however, that the *washing machine* and the *wringer machine* may not be operated at the same time, the patentee, manifestly, considering, and properly so, that this was not necessary.

In view of the Movement 53 of 507 Mechanical Movements, heretofore referred to and disclosed in the drawing "Defend-

ant's Exhibit No. 14" (R. 226), it is manifested that any mechanic desiring to provide a reverse mechanism for the wringer machine of the Woodrow patent had everything necessary in the art to do so, without the exercise of anything more than mere mechanical skill.

If the particular mechanic who attempted to apply the said reverse gearing to the Woodrow patent had not sufficient knowledge of his own as to how to apply this simple and familiar mechanical movement to reverse an operating shaft, the nearest machine shop would provide him with any number of examples of how to do so. More than this, he would not have to go out of the art of washing machines in order to find a precedent for such a reverse gearing in connection with a wringer on a washing machine, as that idea is fully disclosed in the Shedlock patent (hereafter discussed). Thus, it is manifest that no invention could be possibly involved in applying to the wringer shaft of the Woodrow patent, means for reversing it.

How the court in the Iowa cases could have upheld the Phillips patent in view of Woodrow's patent and Mechanical Movement No. 53 is beyond comprehension, except upon the theory that Phillips was the first to *conceive* the idea of such a union and that some new and useful result flowed therefrom. The evidence in the case at bar manifestly negatives both branches of such theory. It was a mere double use of the old Mechanical Movement No. 53, and applied to the lower wringer roll shaft 39 instead of to the shaft of a machine shop tool. No new result and no modification or improvement in any old result followed thereby.

SHEDLOCK PATENT No. 1350, OF 1889.

This British patent (R. p. 246) embodies broadly all of the features of the Phillips patent, so far as the claims in issue are concerned. Moreover, it discloses every feature of Phillips' alleged invention excepting such *specific details* of

gearing as Phillips found most convenient and economical to add to his *particular form of dolly driving mechanism*, the old gearing for reversing a wringer that he selected to use in his machine.

This Shedlock patent discloses a power driven *washing machine* provided with a reversible *wringer machine*, both being operated from the same source of power. The Shedlock washing machine is not of the dolly or agitator type, and for that reason mainly (although other reasons are advanced), Mr. McElroy, petitioner's expert, has found that this English patent is of no moment in this case, and has no bearing upon the claims in issue.

The Shedlock washing machine is of the *cylinder or drum type*, and as disclosed in the drawing, consists of a tub *a*, in which there are provided two compartments. Each compartment contains a barrel or drum *b*, provided with gudgeons or short shafts *c* whereby it is mounted in the end walls of the tub in such manner as to be capable of an alternating rotary motion. Intermediate the two barrels, there is mounted in the tub a drive shaft *C* on which are placed a fixed pulley *B* and a loose pulley *B'*. Intermediate the shaft *C* and each of the shafts *c*, there is gearing for imparting to the shaft *c* and its associated barrel or drum, an *alternating rotary motion*.

It is not necessary to describe in detail the gearing intermediate the drive shaft *C* and the washing machine shaft *c* by which this alternating rotary motion is brought about. Mr. McElroy does not deny that the intermediate gearing shown will bring about the required alternating rotation of said shafts.

There is provided on each washing machine shaft *c* a clutch *E* operated by a hand lever *F'* so that either one of the shafts which operate the washing machine drums may be operatively connected to or disconnected from the drive shaft *C*. The construction of the Shedlock machine in this respect is the same as in the case of the "Automatic Washer" (Complain-

ant's Exhibit 10) where the dolly driving gearing may be operatively connected to or disconnected from the drive shaft 15.

On top of the tub and intermediate the positions of the two barrels or drums (see Figure 2) there is located a wrinegr which is arranged with its shaft parallel to the main drive shaft and to the washing machine shafts. This wringer is so located that the clothes may be wrung from one compartment of the tub into the other compartment of the tub or *vice versa*, the two tubs being provided with lids a^1 , a^1 which may be removed to give access to the interior of said compartments. The wringer is arranged to be reversed by the following mechanism:

On one shaft of the wringer, there is fixed a gear W, and located below this shaft and parallel therewith, there is a shaft T^1 , at the end of which there is fixed a pulley T^2 . On said shaft T^1 in the plane of the gear W (see Figure 2) there is mounted a swinging arm T^3 which carries two gears U, U^1 , which mesh with opposite sides of a gear V fixed on the shaft T^1 and gear U^2 which meshes with the gear U^1 . Manifestly, when the shaft T^1 is rotated, movement will be imparted to drive the gears U, U^2 in opposite directions.

Thus when the arm T^3 is swung in one direction to bring the gear U^2 into engagement with the gear W on the wringer shaft, the wringer will be operated in one direction and when said arm is swung in the opposite direction to bring the gear U into engagement with the gear W on the wringer shaft, the wringer will be operated in the opposite direction. In other words, *means for reversing the wringer shaft is provided in the gearing described.*

When the arm is in an intermediate position, both gears U, U^2 will be disconnected from the gear W on the wringer shaft and the wringer will be at rest. A plate T^4 is shown provided with holes to be engaged by a pin carried by the arm T^3 so as to lock said arm in either of its operative posi-

tions in a familiar manner. No intermediate hole is shown to lock the arm in the intermediate inoperative position, such intermediate hole being unnecessary as the only time the arm is required to be locked is when the gears are in one or the other engaging positions.

The Shaft T¹ which operates the wringer is operated from the main drive shaft C as follows:

“Motion is preferably imparted to the wringer T by means of a belt from an extension B² upon the boss of the loose pulley B¹. By means of this arrangement the said wringer T is not operated until the rotating receptacles b are stopped and the driving belt passed from the fast or driving pulley B onto the loose pulley B¹. This arrangement is advantageous as the wringer T is *not usually* required whilst the revolving receptacles b are in motion. (Shedlock pat., page 4, lines 15-20.)

Thus in the *preferred form* of the English machine for the reason given in the above quotation, the wringer is not driven from the drive shaft C directly, but from a pulley mounted on said shaft. For this reason complainant's expert takes the position that this English patent does not disclose the use of a common drive or line shaft for both the washing machine and for the wringer machine.

It is manifest, however, from the fact that the patentee specified as the *preferred construction*, the *connection* of the wringer shaft to a loose pulley on the drive shaft, that he realized that another construction would be familiar to any one, namely, one that would connect the wringer shaft *directly* to the drive shaft.

If the shaft T¹ is connected to the fixed pulley on the main drive shaft C, we have in the Shedlock patent a *washing machine* and *wringer machine*, which may be operated at the same time or in which one may be operated when the other is not operated. And it would require only the work of a mere mechanic to fix the loose pulley, in a familiar manner by pin or key, to the drive shaft C in order that both the washing machine and the wringer might be operated at the same time.

All the mechanism required to operate the two machines in this way is present, and there is even shown clutch mechanism in the connection between the main drive shaft and each of the operating shafts of the washing machine whereby one or both of said washing machine shafts may be operatively disconnected, when the main drive shaft is running to operate the wringer. Likewise any mechanic would realize that the wringer, even though the shaft T¹ should be rotating, would be stopped and brought to rest by simply shifting the arm T² into its intermediate inoperative position.

"Defendant's Exhibit No. 16" (R. 227) shows a diagrammatic view of the parts of the Shedlock patent to which we have applied, for convenience, reference numerals corresponding to those used in the Phillips patent.

Thus, this Shedlock patent apparently discloses all the features of the Phillips patent in suit insofar as the claims in issue are concerned. It shows a main drive shaft 15; washing machine shafts 45 capable of alternating, rotary motion and mechanism intermediate the drive shaft and said washing machine shaft, to wit, gears 46 and connecting parts, for imparting an alternating, rotary motion to said washing machine shafts 45; a wringer shaft 39 and suitable mechanism intermediate said wringer shaft 39 and the drive shaft 15 for imparting continuous, rotary motion to said wringer shaft in either direction, together with a controlling device 34 for operatively connecting or disconnecting the wringer shaft 39 from the mechanism adapted to drive it.

The concept, as a mere concept, of applying a power driven reversible wringer to a washing machine, when both the wringer machine and the washing machine are driven from the same source of power, was clearly admitted by the petitioner's expert not to be an original concept of Phillips, but to be found in the Shedlock patent.

"The broad concept, irrespective as to any limitation of the character of the washing machine and the possibility of the washing machine and the wringer being run

simultaneously, could probably be said to be found in Shedlock." (McElroy's Reb. Dep., X-Q. 24; R. 201.)

It is true that the Shedlock British patent shows a machine of the cylinder type instead of the dolly type or agitator type, but he specifically says that his invention may be used with other kinds of washing machines. The operating shaft in Shedlock is given an alternating rotary motion, but is in a horizontal position merely because of the character of the operating tool therein, to wit, the cylinder. The dolly washing machine also has an alternating rotary shaft, but said shaft is an upright or vertical shaft merely because of the character of the agitator or tool that it carries. Insofar as the principle or concept of a washing machine combined with a reversing wringer machine is concerned, it manifestly makes no difference whether these two machines have different tools, the one a drum and the other an agitator, upon their alternating rotary operating shafts, or whether those operating shafts be located in an upright or in a horizontal position, because neither of these two things in any manner affects, controls, influences or modifies the function or operation of any or all of the elements of the wringer machine.

But Shedlock's invention includes a reversing wringer device and his patent in line 28, page 2, clearly states:

"My said invention is, however, applicable to other washing machines" than those having a horizontal operating shaft for a drum or cylinder. In other words, he *illustrates* his invention of a combined power driven washer and reversible wringer in connection with a drum or cylinder type of washer, but *claims* its use upon a dolly or agitator or other type of washer.

It follows, therefore, that the distinction attempted to be made, between the Shedlock patent and the Phillips patent, based upon the difference in the tools distinguishing an alternating cylinder machine from an alternating dolly machine and upon the position of the tool shafts, is a distinction with-

out a difference. It is a mere verbal distinction. It has no substantial merit. It will not stand the test of intelligent criticism.

Respondent insists, therefore, that each of the claims 5, 6, 7 and 8, in issue, are invalid, because substantially anticipated by the British patent to Shedlock.

The strongest criticism of the Shedlock patent urged by the petitioner's expert, is based upon the seventh element of the Phillips claim, namely, a driving mechanism on the wringer shaft "connected with the power shaft." The power shaft 15 of the Phillips patent, as Mr. McElroy admits, corresponds to the power shaft C of the Shedlock patent. In both cases that shaft is given its motion from a common motor. In both cases this shaft is continuously in operation when the motor is running. In the Phillips patent, the *connection* between that shaft and the motor is by gearing. In the Shedlock patent, the connection between the motive power and the shaft C is by a fixed and a loose pulley. A belt and two pulleys has been the mechanical equivalent of a pair of intermeshing gears, since the time when the memory of mechanics runneth not to the contrary.

We submit with every confidence that this court will be unable to find any distinction between the Shedlock machine as shown in his drawing, wherein the pulley B is keyed or made fast to the shaft C, while the pulleys B¹ and B² are loosely mounted thereon, and a reversal of this arrangement, wherein the pulley B is loosely mounted on the shaft and the pulleys B¹ and B² are fastened or keyed to the shaft, precisely as the fixed pulley B is stated to be. Mr. McElroy says that when the pulleys B¹ and B² are operated to connect the power with the wringer, the shaft C remains stationary. This is no disadvantage. It was pointed out in the Shedlock patent that this was but a "preferred" arrangement, in order that the operation of his washing machine may be suspended while wringing the clothes. Shedlock, however, was not limited to such a construction. He stated in his specification:

"It is obvious, moreover, that I *can somewhat further modify* my said automatic reversing gear, without departing from the nature of my said invention." (Shedlock, line 10, page 5.)

That sentence, taken with the description:

"Motion is *preferably imparted* to the wringer T by means of the belt," etc. (line 15, page 4),

clearly indicates an intention on the part of Shedlock not to be limited to the precise construction shown in his patent. It is no objection that he did not anticipate Mr. McElroy's criticism, "There is no other form shown or suggested," by describing a modified form. Modifications were suggested and any trained or untrained mechanic could make them. The modification of connecting the pulley B² to the fast pulley B instead of to the loose pulley B¹, is a perfectly obvious one to make. It would be entirely within range of any mechanic, also, to fasten the two pulleys B¹ and B² to the shaft C by a key and allow the pulley B to run loose. The distinction just pointed out will not save the Phillips patent from being anticipated by Shedlock.

Another criticism urged by Mr. McElroy as to the Shedlock patent is based upon the eighth element of the Phillips claims, to wit, "the controlling means for operatively disconnecting the wringer shaft 39 from the driving shaft 45." Mr. McElroy limits this controlling means to a lever, having three stops or positions, in one of which the wringer shaft 39 will be rotated to the right; in the other of which the wringer shaft will be rotated to the left; and in the intermediate position the wringer shaft will be disconnected and incapable of rotation. Mr. McElroy points out that in the Shedlock patent, the quadrant or segment T⁴ has but two holes or apertures or notches, in which a pin on the lever T³ may be engaged. When engaged with one of these notches the lever is in such position that the wringer rolls will operate to the left, while when engaged in the other position, the wringer rolls will operate to the right. Mr. McElroy insists that there

is no intermediate position in which the lever T^3 can be locked, although he admits that there is an intermediate position in which the lever may be placed in such manner as to disconnect the wringer rolls and when held in this position by hand it will stop the operation of the wringer rolls. In other words, Mr. McElroy points out that in the Phillips patent, the quadrant has three notches or stop places for the lever, and that since the Shedlock patent has, but two notches, it cannot anticipate.

We insist, however, that if this was the only difference between the Shedlock patent and the Phillips patent, no court would presume to hold the Phillips patent valid. There could be no possible act of invention in boring an intermediate hole in the lever quadrant and thus provide a locking aperture or device for the intermediate position of the Shedlock lever.

We confidently submit, therefore, the Shedlock British patent to the consideration of the court, being of the firm conviction that we have the right of the case; that the complainant has not advanced proper or sound objections and that this court will find that claims 5, 6, 7 and 8 of the Phillips patent are absolutely anticipated and void.

(a) AGGREGATION.

We assert, without fear of contradiction, that since the Faber pencil case, it has been the undeniable rule of law that *an aggregation of elements or an aggregation of sub-combinations of elements, is not invention*. The principle has been reiterated again and again in the cases.

The argument of Mr. Justice Hunt in this case is most illuminating and instructive of the principle of "aggregation" as a valid defense. The patent involved a combination of a piece of rubber at one end of the same piece of wood, which contained lead, to form a lead pencil. The claim was for the

combination of two independent devices, namely, a rubber eraser and an ordinary lead pencil joined by a common handle, i. e., the wood.

This was undoubtedly novel at the time of the patent in suit. It was unquestionably useful. Millions upon millions of these pencils had been and are being sold and used. It sprang into favor to fill a long felt want, immediately upon its being introduced by the patentee.

The utility, however, in the pencil device, as in the Phillips device in suit, consisted merely in having the two machines, the writing machine and the erasing machine, combined in one structure. It was certainly more convenient for a person to turn a small stick of wood in the fingers of the hand and use either end at will than to lay down the writing machine or pencil and pick up the erasing machine. Moreover, having the two combined in one implement was a matter of great convenience, subjecting the owner to less liability of losing the one or the other or of misplacing the two separate tools or machines.

No effect was produced or no result followed by reason of the *joint use* or *juxtaposition* of the two machines, as a single article of manufacture, for the common handle between two machines, the lead pencil and the eraser, *did not create or produce any new or modified operation.*

The Supreme Court said:

“the combination, to be patentable, must produce a different force or effect, or result in the combined forces or processes, from that given by their separate parts. There must be a new result *produced by their union*; if not so, it is only an aggregation of separate elements.”

And again the court said:

“In the case we are considering, the parts claimed to make the combination are distinct and disconnected; not only is there no new result, but *no joint operation.*”

There is no relation between the instruments in the performance of their several functions.”

Reckendorfer v. Faber, 92 U. S. 347.

It will be noticed that the Supreme Court called the eraser and the lead pencil "instruments." In other words, they were two separate machines—one to write with and the other to erase the writing. Precisely as in the Phillips patent, we have two separate machines—one to wash clothes with and the other to wring the water out of the clothes after being washed. Each of these two machines performs its own separate and distinct function, and there is no reciprocal action between them. There is no new result as the product *due to their joint and co-operating action*. There is no "mutuality of action."

This court has held there is nothing but aggregation in the bringing together of a damper in the middle flue of a three-flue stove and a portable base pan or a warming closet.

Bussey v. Excelsior Mfg. Co., 110 U. S. 131.

The Watson patent was for a freight car having two sets of doors, one sliding on the outside of the car in a familiar manner, and the other composed of hinged sections, so that it would be flexible. The hinged sectional door was mounted upon curved rods located inside the car and extending vertically from the floor to the center of the car roof, so that the inside flexible door could be slid up vertically and then horizontally to a position under the car roof. When grain was transported the outer doors were left open and the flexible doors brought down into use and *vice versa*. This combination of inside and outside doors was held to be a mere aggregation, an unpatentable combination and invalid.

Watson v. Ry. Co., 132 U. S. 161.

In this device the two sets of doors could be used simultaneously, but were designed to be used independently when the car was used for different purposes. So in the Phillips patented device, the wringer machine and the washing machine may be set in motion simultaneously, but *practically* in use one is idle when the other is doing its intended work upon the clothes. Both are perfect examples of unpatentable aggregations.

In another case, the patent in suit claimed the combination of a bonnet or hood of a street car provided with a mirror in combination with an opening, or an opening covered by a transparent medium, in the front end of the car. This was held to be a mere aggregation of elements and the patent void for that reason, the court saying:

"A combination is patentable only when the several elements of which it is composed produce *by their joint action* a new and useful result, or an old result in a cheaper or otherwise more advantageous way. * * * There is, in fact, no combination, but a mere aggregation of separate devices, each of which performs the function for which when used separately it was adapted, and *does not contribute to any new result, the product of their joint use.* * * * Neither one of the three elements of the alleged combination performs any new office or imparts *any new power to the others*, and combined they do not produce any new result or any old result more cheaply or otherwise more advantageously. There is, therefore, no patentable combination."

Stephenson v. Brooklyn, 114 U. S. 49.

The Phillips patent falls within the rule announced in this case.

In *Hailes v. Van Wormer*, 20 Wall. 353, where a patent for stoves was involved, the court, in defining the difference between a patentable combination and an unpatentable aggregation, said:

"Merely bringing of the devices *into juxtaposition*, and there allowing each to work out its own effect without the production of something novel, is not invention. No one by bringing together several old devices without producing a new and useful result, *the joint product of the elements of the combination and something more than an aggregation of old results* can acquire a right to prevent others from using the same devices either singly or in other combinations."

In this case a space around the fire pot leading to the base of the stove doubtless produced some beneficial results, but these results were not changed by the fact that a flaring fire pot, a supply reservoir with a contracted discharge end, and

openings for illumination were used in the same stove. Of this device the court said:

"It still operates to conduct the products of combustion to the base and into the exit flue. No new operation is given to it *by the combination*. The same may be said of every other device employed by the defendants which is also in the complainant's combination. Each produces its appropriate effect unchanged by the others. That effect *has no relation to the combination*; in no sense can it be called *its product*. Thus far nothing novel is produced. This, then, is mere aggregation of devices and not invention."

In *Richards v. Chase Elevator Co.*, the Richards patent for an apparatus for transferring grain from one railroad car to another without mixing different lots with each other was in question. The patent claimed a combination of five elements, to wit, a stationary or fixed building, a pair of railway tracks, an elevating apparatus, an elevator hopper scale, having a fixed or stationary hopper provided with a valve or slide in its bottom, and a discharge spout arranged for discharging the grain directly from one hopper into another, or from the hopper into a car. The elements were all old, but the court unanimously found that the patent was invalid on the ground of aggregation,—the court stating:

"Unless the combination accomplishes some new result, the mere multiplicity of elements does not make it patentable. *So long as each element performs some old and well known function, the result is not a patentable combination but an aggregation of elements*. Indeed, the multiplicity of elements may go on indefinitely without creating a patentable combination unless by their collocation a new result is produced. Thus, nothing would have been added to the legal aspect of the combination in question by introducing as new elements the car from which the transfer was made, the engine that drew such a car, the steam shovel, the engine that operated the shovel, and the elevator, as well as the locomotive which drew the loaded car from the building, though these are all indispensable features, *since each of them is an old and well known device and performs a well understood duty*. * * * *Not a new function or result*

is suggested by the combination in question. The cars run into the building on railway tracks, as they have done ever since railways were invented. The building is fixed and stationary as buildings usually are. It is no novelty that it should contain an elevating device, and that the latter should raise the grain to the hopper scale, and should discharge it either into a bin or a vessel or into another car. In principle it makes no difference which. In fact, *the combination claimed is a pure aggregation* and the decree of the court dismissing the bill is therefore affirmed."

Richards v. Chase Elevator Co., 158 U. S. 299.

The facts of the next case are very similar to the facts in the case at bar and the decision should be controlling here.

In *Morris v. McMillan*, 112 U. S. 244, the McMillan patent, illustrated in the report of the decision, was for a capstan on a ship and a hoisting engine on the same ship connected by means of shafts and gearing so that both machines could be operated from the same steam engine or source of power. The steam engine was so geared that the reciprocating motion of its piston would impart a rotary motion to one or to the other of horizontally disposed hoisting drums. A *common drive shaft* was so arranged as to communicate this motion of rotation, through intermediate gears and shafting, to the capstan on deck.

Thus, as in the Phillips patent in suit, there were two separate machines,—a rotatable capstan, around which a rope could be thrown and wound or unwound in a familiar manner to weigh anchor or pay out anchor, and a hoisting drum, about which a line could be wound or unwound in raising freight from a lighter or from the hold of the vessel to its deck, or in lowering freight from the deck of the hold of the vessel, or to a lighter upon the outside of the vessel. Both of these independently operating machines were actuated and put in motion by the common steam or hoisting engine. The combination of these two machines was held to be absolutely invalid in *Morris v. McMillan*—both on the ground of non-invention as well as of aggregation.

In *Morris v. McMillan* the two machines, the hoisting drums and the capstan, could be used simultaneously or separately as desired, but *each functioned individually to do its own peculiar and predetermined work*, and neither, when in operation, was affected or influenced by the action of the other. In Phillips case, the wringer machine and the washing machine are *intended to be operated separately, but may be operated simultaneously only* when the lid of the washing machine is *closed down*. In other words, when the *clothes in the wash tub* are to be subjected to the action of the wringing machine, the *washing machine must be disconnected and thrown out of action*.

His two machines are thus as independent in construction and as individual in practical use and operation as were the hoisting drum machine and the capstan operating machine in *Morris v. McMillan*, and like the aggregation of machines in that case, do not constitute a patentably co-operating combination. They are a mere aggregation of old parts and of old machines, producing no new and beneficial results as a result of alleged combination. It follows that the Phillips patent is invalid.

It was asserted in the argument below that there was patentable utility in combining these two independent machines on a single support or wooden tub in that it greatly tended to the convenience of the operator. This, if true, does not relieve the patent of the charge of aggregation. Mere utility and mere novelty appeared in the lead pencil case—and in the other cases.

Counsel for petitioner has failed to recognize that the Phillips patent represents an attempt to claim as a monopoly, exactly the same "aggregation" of intrinsically unrelated elements or sub-combinations of elements which do not "co-act to produce a unitary result, a combined operation," as was held invalid in the Faber case and like cases of aggregation.

In the Faber Lead Pencil case there was the common member (the wooden hand member), and the two operating members (the pencil at one end and the eraser at the other end of the common member).

The lead pencil and eraser were certainly connected in a "simple, convenient, unitary STRUCTURE," such as appellee asserts the Phillips machine to be. But in neither the Faber nor the Phillips *structures* is there any "UNITARY RESULT" or "COMBINED OPERATION."

The operating members of the lead pencil could be used to operate by means of the same common hand member, upon the same piece of paper, in connection with different pieces of writing. The one thing they could not do, however, was to be operated at the same time in connection with the same piece of writing. That is to say, you could not, with the same pencil-eraser instrument, write and erase upon the same work piece at the same time. In addition, the writing with the pencil operating member had nothing whatever to do with the erasing operating member. You might write a certain amount with the pencil operating member and then erase the whole, or a part, or none of the matter written, by the pencil operating member. You might use the eraser to clean or otherwise treat the written sheet without touching the matter written by the pencil. The essential point of the case was that notwithstanding the convenience and admitted novel utility of a common handle, "the common handle cannot make any two or more of those elements co-act to produce a unitary result, a combined operation."

Our position on the question of aggregation is,—without regard to any prior art, without regard to any question of novelty and without regard to any question of improved or beneficial results,—*the alleged combinations called for by the claims of the Phillips patent represent "aggregations" of sub-combinations of elements, of exactly the same kind and character as the aggregation of the individual elements that were held to be not patentable in the Faber case.*

That is to say, the sub-combination including the wringer shaft, the reversing mechanism and the controlling device therefor, and the sub-combination of the dolly shaft, the mechanism for imparting the alternating, rotary movement thereto and the means for driving said mechanism, are analogous, respectively, to the rubber at the end of the pencil, and to the lead point at the other end of the pencil, and that the common drive shaft for these two sub-combinations is analogous to the intermediate handle or driving member of the pencil. In each instance, the intermediate or common joining member by which each is made a convenient, unitary structure, is the *power member*,—the one a *motor power member*, the other a *hand power member*.

Neither of these sub-combinations can act upon the same piece of clothing that is under treatment, at the same time that the other is operating upon the said piece. Either sub-combination can be used without the other, without any effect upon the result. Either sub-combination may do its work without affecting the independent *result* of the operation of the other, and *vice versa*. Each sub-combination will produce its own results independently without regard to the fact that the two are driven by the intermediate common member or device. There is no intrinsic combination between the two sub-combinations, that in any way produces a single or unitary result due to the combination. It is purely a case of "aggregation."

The principle is just as applicable to the "aggregation" of two *groups* of elements as to the aggregation of two *single* elements.

Nor will any "unclaimed mediator between otherwise unrelated elements" either "the material operated upon or the operator" save the subject-matter of the claims from the charge of aggregation. The *clothes* in the tub act in no way to co-operatively connect the washing machine with the wringing machine to produce a joint result as the twine material connected otherwise unrelated elements to produce the

twine in the case of *Oshkosh Grass Matting Co. v. Waile Grass Carpet Co.*, 207 Fed. 937.

Nor does the washer-woman act as an intermediary in the production of a joint result due solely to the combination of otherwise unrelated elements as in the case of the *Burdet-Rowntree Mfg. Co. v. Standard Plunger Elevator Co.*, 196 Fed. Rep. 44, 197 Fed. Rep. 744. In both of these cases there was a joint "unitary result, a combined operation" such as cannot be predicated upon the adding together of the two sub-combinations of Phillips.

Any increased efficiency in the Phillips' gearing is due to the fact that each sub-combination is motor driven and is in no sense due to any intimate relation of the sub-combinations to each other. The two sub-combinations have no common object. Each has its own object and performs it without reference to the other.

The bringing together of the washing machine sub-combination and of the wringing machine sub-combination, neither by the operator nor by means of the clothes operated upon, can possibly be said to bring about a combined unitary result.

(b) ADDITION OF REVERSE TO WOODBROW—NOT INVENTION.

The defense of non-invention is based briefly on this set of facts. Shedlock disclosed the concept of driving both a washing machine and a wringing machine from a common motor and of providing the wringing machine with means for reversing the wringer and with a suitable controlling device for the reversing means. Petitioner's claim, however, is that Shedlock's washing machine is not a dolly type of washing machine. In fact, they claim that it is a very dangerous washing machine, capable of use only in large commercial laundries. No claim is made, however, except by inference, that either the washing machine or the wringing machine with its reversing and controlling mechanism, is not operative.

Woodrow's patent discloses a dolly washing machine with a wringing machine mounted on the tub thereof and with an electric motor also on the tub connected by a common drive shaft to drive both the washing machine gearing and the wringing machine gearing. Woodrow did not provide the wringing machine with a reversing gearing.

A reversing gearing in connection with machines of any kind whatever is old. One of the oldest and most well-known mechanical movements is Mechanical Movement No. 53, shown in Defendant's Exhibit No. 14.

It would not be invention, in view of the well-known use of the reversing gearing Mechanical Movement No. 53, to apply this reverse gear to the driving shaft for the Woodrow wringer. It would do the same and no more in connection with the wringer than it had done in connection with any other shaft that was to be reversed. The result was the manifest intended, expected and desired result. Even without this there would be no inventive concept because Shedlock showed the concept of applying a reverse gear to a wringer on a washing machine that was driven by the same motor that drove the washing machine.

Thus our position in regard to non-invention is that it would be nothing but the merest mechanical skill, the expected skill of the calling, for one to add to the Woodrow machine either the reverse gearing of Shedlock, the reverse gearing of Mechanical Movement No. 53, or the much simpler reverse gearing that Woodrow did add to his machine by making the automatic machine involved in the case brought by the Grinnell Co. against Woodrow and his associates.

In the process of development of manufacturers, a constant demand for new appliances is made, which the skill of the ordinary workmen and engineers are generally adequate to devise, and which are but the natural and proper outlet or product of the development of a given art. Each step forward prepares the way for the next and each is usually

taken by spontaneous trials and attempts in many different directions. The Supreme Court recognizing this condition, said, in one case:

"To grant a single party a monopoly of every slight advance made, except where the *exercise of invention* somewhat above ordinary mechanical or engineering skill is *distinctly shown*, is unjust in principle and injurious in its consequences. The design of the patent laws is to reward those who make some substantial discovery or invention which adds to our knowledge and makes a step in advance in the useful arts. * * * It was never the object of those laws to grant a monopoly for every trifling device, every shadow or shade of an idea which would naturally and spontaneously occur to any skilled mechanic or operator in the ordinary progress of manufacture."

Atlantic Works v. Brady, 107 U. S. 192.

This case was cited and relied upon in *Phillips v. The City of Detroit*, 111 U. S. 607, in which the Supreme Court, referring to the patent then before the court, said:

"It is plain, therefore, that the improvement described in the patent was *within the mental reach of anyone skilled in the art* to which the patent relates and did not require invention to devise it, but only the use of ordinary judgment and mechanical skill. It involves merely the skill of the workmen and not the genius of the inventor."

See also *Railroad Supply Co. v. Elyria Iron*, 244 U. S. 285.

Could anything more true be said of the Phillips device? He may have exercised good judgment in the selection of the old and well known parts which constitute his machine but not invention. It was but the exercise of the "expected skill of the calling."

It is upon the theory of a basic invention by Phillips that the petitioner undertakes to levy tribute upon all washing machine manufacturers who presume to do what Shedlock had done, or what any skilled mechanic would do, by the exercise "of the ordinary faculties of reasoning upon the ma-

terials supplied by a special knowledge." It is upon this alleged original conception and broad basic idea that the petitioner seeks to levy tribute upon the housewives and laundresses all over the country.

It is plain that such a conception was not original with Phillips. This is admitted in the evidence by petitioner's expert McElroy, when he narrowed the scope of the claims in suit and no longer asserts that Phillips was the first to produce and disclose the combination of *any kind* of a reversing wringer machine with *any kind* of a washing machine. All that he claimed for Phillips is the combination of a reversing wringer machine *with a particular kind of washing machine*. In producing this juxtaposition or alleged combination of two old machines, Phillips made no new device, produced no new mechanism and accomplished no new result. The result is old, the idea he obtained from others. It was simply a matter of selection, on his part, as to which particular kind, of the many kinds of washing machines available, he would apply the old Shedlock idea.

ANTICIPATION-SHEDLOCK PATENT.

But, as we have shown, the gearing of the Phillips patent as covered by the claims in issue herein, is anticipated by the Shedlock British patent (*supra*, page 25). Every element of the combination called for by the several claims is found in the said patent. This, petitioner's expert McElroy has in effect been compelled to admit, his reservations being merely such as to emphasize the force of his admissions. His main differentiation from Shedlock is based on the difference between the two types of washing machines driven by the gearing. A drum or cylinder type in Shedlock,—a dolly type in Phillips.

Such differentiation, however, cannot stand. In truth, the petitioner has made no secret of the fact that it intends, in case

this court should sustain its patent, to attempt to bring within the scope of the patent, washing machines of the cylinder or barrel type, that is to say, washing machines like that of Shedlock.

After Shedlock had disclosed to the world the way of using and controlling a reversing wringer machine combined in one structure with a rotating cylinder or basket machine, both being driven from the same power, there could be no possible exercise of inventive ingenuity in applying a reversing wringer machine to a different kind of washing machine, unless patentability would inhere in the *particular and specific means of making the application*. In such case the claims would be limited strictly thereto.

After Shedlock had disclosed the idea of a reversing wringer machine in combination with one type of washing machine, to wit: a cylinder or barrel machine, there could be no possible room for inventive idea or ingenuity in substituting in that same combination of elements one old form of washing machine for the other old form of washing machine.

ERROR IN BRIEF FOR PETITIONER.

We have mentioned in the beginning of the brief for respondent, the error of counsel for petitioner in attempting to treat the prior washing and wringing art as alone having bearing upon the patent in suit. This error may arise from the fact that the new counsel in the case has but recently become associated with the litigation and is therefore not as familiar with the subject as he might be.

Several misstatements are made in the brief, not, we think, from any intention to mislead. For example, on page 4, the statement is made, "Wherever these dolly washing machines were employed, the wringing was, at first, usually done as before, being a hand operated wringing machine *mounted upon another independent tub.*" (Italics ours.) The earliest hand washing machine patent shown in the record herein is

that to Madison. This undoubtedly shows, as will be apparent from an examination of Figures 1 and 3 (R., 237), a *wringer board on the tub* for the attachment of the *wringer*, with its associated drip board, for draining the water from the clothes back into the tub.

Another palpable error in the petitioner's brief (pp. 20, 21) is in the following statement made in connection with the Woodrow patent:

"It is significant * * * that after the advent of the Phillips machine on the market, Woodrow, who had theretofore been making and marketing the machine of his patent, changed his machine so that it would embody the Phillips invention *and enable washing and wringing to be done at the same time, coupled with the capability of full control of the wringer meanwhile*. For putting out this converted machine, Woodrow was sued by plaintiff and was enjoined in the case of *Grinnell Washing Machine Company v. Woodrow*, 209 Fed. 621." (Italics ours.)

The Woodrow machine referred to is known in this record as "Complainant's Exhibit, Automatic Electric Washer and Wringer." That the above statement quoted from petitioner's brief is absolutely incorrect, is apparent from the following quotation from the deposition of Mr. McElroy (R., 201, 202):

"X-Q. 25. Stepping aside for a moment: In view of your talk of running the wringer and washing machine simultaneously, I will ask you to refer to 'Complainant's Exhibit, Automatic Electric Washer and Wringer,' and state whether the washing machine and wringer can be run simultaneously?"

A. The machine is broken and I cannot tell without operating the machine itself, what the action would be."

Complainant's counsel here admits that in the machine referred to, the wringer and washing machine cannot be run at the same time.

"X-Q. 26. From Mr. Orwig's admission in regard to this machine, it is clear that 'Complainant's Exhibit, Automatic Electric Washer and Wringer,' is identical in this respect with the Shedlock patent, is it not?"

A. Understanding that this statement applies only to

the matter of simultaneously operating the wringer and washing machine mechanisms and recalling that the washing machine mechanisms are radically different, and if Mr. Orwig is correct, the answer would be affirmative."

That Mr. McElroy objected to making this admission is manifest from the foregoing quotation. He had testified in behalf of plaintiff in the case against Woodrow referred to in petitioner's brief and should have known, even if the machine was broken, that in the "Automatic" or Woodrow machine, *the washing and wringing mechanisms could not be operated simultaneously*. Thus, one characteristic, alleged novelty, now urged for the Phillips structure, was not present in the machine of the defendant held to infringe in the first suit on this patent.

Again on page 7 of petitioner's brief appears the following:

"When Phillips entered the field, the Woodrow machine represented high mark in the art. Phillips saw and appreciated the advantage of the compactness of the Woodrow machine, but he appreciated also that it did not by any means solve the problem of getting out with the greatest possible promptitude, the 'week's wash,' *because the washing and wringing operation were still independent operations, requiring for their successive performance a great loss of time*. So he set to work to solve the problem of bettering this condition. His broad conception was of a power operated machine that should wash and wring the clothes at the SAME TIME, by power applied through a main, continuously rotating, driving shaft, and his further conception was that the wringing mechanism of such combined machine should be capable of such manipulation that the wringer rolls could be instantly rotated either in one direction or the other, or arrested, or thrown out of operation entirely when the exigencies of the case demanded, without interrupting the continuous revolutions of the motor or main driving shaft."

The first point, namely, that the wringing and washing mechanisms could be operated at *the same time*, is applicable to any two or more independent machines that are connected

to be driven by a common drive shaft, as in any machine shop. In addition, it is true of any hand operated washing and wringing machine mounted on the same tub. It may also be said of power and of hand operated washing and wringing machines whether or not the washing and wringing machines in either case are or are not mounted on the same tub.

This result is due to the absolute independence of the one machine with respect to the other. This alleged novel "washing and wringing the clothes at the same time" as a result of the Phillips gearing, illustrates better than anything else the absolute lack of co-action, of co-ordination or of interdependence of the washing and wringing machines to produce any result novel or otherwise, by reason of their alleged connection.

The second point made by counsel for petition is, "A further conception was that the wringing mechanism * * * could be instantly rotated either in one direction or the other, or arrested * * * without interrupting the continuous revolutions of the motor or main driving shaft." This is the absolute and essential characteristic of any reverse mechanism. Mechanical Movement No. 53, heretofore referred to, shows just such mechanism. The same mechanism in a somewhat different form is shown in the Shedlock patent. Such conception was not novel with Phillips. It was not novel even in connection with a washing machine.

It is thus futile for petitioner to predicate patentability upon Phillips' gearing, either because it was connected to two separate mechanisms, a washing machine and a wringing machine, so that they could be operated independently, and therefore at the same time, or not as desired; or because he added to the gearing of the Woodrow patent the well known, old, reverse gearing No. 53 or that of the Shedlock patent.

No matter which way the question is approached, the Phillips patent is invalid. Whether it represents merely the adding together of one and one to make two, as in the Faber case,

and thus is an aggregation, or whether it represents the addition to the Woodrow machine of reverse gearing No. 53 as a substitute for the reverse gearing in the washing machine of the Shedlock patent, and is therefore not invention—the result is the same. The concept in either case is but that which the courts have since the beginning held to be not *patentable*,—*not that inventive concept* which was intended to be protected by the statutes.

ALLEGED ERROR OF THE COURT OF APPEALS OF THE SEVENTH CIRCUIT.

We are satisfied to rest our case on the opinion of the Court of Appeals of the Seventh Circuit. The opinion is sound in law and is based on a very careful and thorough consideration of the evidence. Most particularly this court's attention is called to the extracts from the evidence of petitioner's expert, stated in the opinion. If this court has any doubt upon the facts as recited in the opinion below, it is urged to read the entire cross-examination of petitioner's expert McElroy in his *prima facie* deposition. (R., 53-81.) It will be found that the petitioner is convicted out of the mouth of its own expert witness.

This court will learn upon reading the record that neither counsel nor expert for petitioner heretofore has rested his position on such untenable ground as that the Phillips gearing is patentable because by means of it, both the washing machine and the wringing machine *may be operated at the same time*. The new counsel in the case has manifestly realized that to add to Woodrow, an old, well known, reverse gearing, particularly where such reverse gearing had been used in the washing machine art, could not be held to be invention. *He was apparently not advised that in the "Automatic Machine" involved in the first case on the patent, the washing machine and the wringing machine could not be operated at the same time.*

Petitioner has manifestly misunderstood the opinion of the

court below. Under the title "Fundamental Error of the Court of Appeals" (Pet. Brief, 16) it is said:

"From the reading of the opinion of his Honor, Judge Kohlsaas, * * * it is apparent that he regarded Phillips' achievement as not different in kind from that of one who, having attached a vise to one end of a work bench and a screw cutter to the other end of the same bench, conceived that he had made a new patentable combination, notwithstanding the fact that there was no co-operative relation between the vise and the screw cutter, and that each performed its own individual office, independently of the other and without the production of any new result, due to their co-operation."

As a matter of fact, no such statement appears in the opinion. At the same time, it may be well to mention the fact that even in the example cited by petitioner, there is as much co-operation or co-action as in the case of the washing and wringing machines in the patent in suit. *Both the vise and the screw cutter may be used at the same time.* And they may be both operated in succession in connection with the same work-piece as in the case of the Phillips gearing.

Judge Kohlsaas was not misled by the petitioner's attempt below, as here, to urge invention for the Phillips gearing because it might be capable of doing the washing and wringing involved in the handling of the "week's wash" in a shorter length of time. On this point, petitioner says (Brief, p. 16) "While one batch of clothes was being washed, another batch of clothes was being passed one or more times through the wringer, thus cutting in two the time ordinarily required for the accomplishment of the same result." If this result depends in any way upon the mounting of the wringer and of the washing machine upon the same tub and upon the fact that they can both be operated at the same time or at different times, the same result is possible in a hand operated machine. The result claimed, however, as Judge Kohlsaas realized, is entirely due to the fact that the machine is a power operated one instead of a hand operated one. The driving of that by power which has been before driven by hand, is not invention. (*Morris v. McMillan*, 112 U. S. 244.)

CONCLUSION.

The claims of the Phillips patent involved herein are invalid because (a) they cover the *joining together* of two well known machines, a washing machine and a wringing machine, by a common, power driving shaft, that is to say, they cover an aggregation; (b) the claims cover subject matter which includes merely the addition, to a well known combination, of an equally well known old element, which accomplishes the same function in its new association that it has always accomplished in every other association of elements to which it has been applied; that is to say, the addition to the machine of the Woodrow patent, of the well known reversing mechanism Defendant's Exhibit No. 14, Mechanical Movement No. 53, (c) the claims cover subject matter fully anticipated by the Shedlock British patent which discloses the gearing called for, element for element, or by equivalent, and this in a washing machine construction.

It will be manifest to this court that the patent in suit is clearly invalid, whether on one or the other, or on all of the grounds mentioned above, and that the Court of Appeals of the Seventh Circuit was correct, and that the opinion of the Court of Appeals of the Eight Circuit was incorrect.

The opinion of the Court of Appeals of the Seventh Circuit should be affirmed and the bill dismissed.

Respectfully submitted,

CLARENCE E. MEHLHOPE,
Solicitor and of Counsel for Respondent.

Chicago, Illinois, April 4, 1918.



IN THE
SUPREME COURT OF THE UNITED STATES

OCTOBER TERM, A. D. 1916.

GRINNELL WASHING MACHINE COMPANY,

Petitioner,

vs.

E. E. JOHNSON COMPANY.

Respondent

On Petition for Writ of Certiorari Directed to the United States
Circuit Court of Appeals for the Seventh Circuit.

PETITION FOR WRIT OF CERTIORARI.

To the Honorable the Chief Justice and Associate Justices of the Supreme Court of the United States:

Your petitioner, the Grinnell Washing Machine Company, of Grinnell, Iowa, prays for a writ of certiorari, directed to the United States Circuit Court of Appeals for the Seventh Circuit, and ordering that the records and exhibits in the case of E. E. Johnson Company, appellant, *vs.* Grinnell Washing Machine Company, appellee, in said Circuit Court of Appeals, for infringement of patent, be certified to this Honorable Court for final review and determination.

Grounds of the Petition.

This petition is based upon the fact that the Circuit Court of Appeals for the Seventh Circuit and the Circuit Court of Appeals for the Eighth Circuit have decided directly contrary to each other upon the same claims of the same patent, in suits having substantially the same records and presented upon substantially the same defenses and the same arguments.

The Court of Appeals for the Seventh Circuit decided that the patent was invalid on the sole ground that its claims covered a mere aggregation and not a patentable combination.

The Court of Appeals for the Eighth Circuit in an earlier case had carefully considered this same question and decided that the same claims covered a patentable combination.

Present Litigation.

Your petitioner, the Grinnell Washing Machine Company, is engaged in the manufacture and sale of domestic washing machines at Grinnell, Iowa, and is the owner of United States letters patent No. 950,402, issued February 22, 1910, and upon which this suit is based. A copy of this patent is hereto attached.

The respondent is the E. E. Johnson Company, a corporation doing business at Peoria, Illinois, and engaged in the sale of domestic washing machines containing the invention covered by the said Phillips patent.

The case was started in the District Court for the Southern District of Illinois, and resulted in a decision by Judge Otis Humphrey that the said Phillips patent was valid and infringed. The opinion of Judge Humphrey has not been reported, but a copy thereof is attached hereto.

Upon appeal the Court of Appeals for the Seventh Circuit reversed Judge Humphrey's decision and held that the patent was invalid, on the technical ground of aggregation.

Antecedent Litigation.

The first case in which this Phillips patent was involved was brought in the Southern District of Iowa (Eighth Circuit), and resulted in an opinion by the Honorable Smith McPherson, holding the Phillips patent to be valid and infringed. (209 Fed., 621.) From this decision no appeal was taken.

The second case under this Phillips patent was also brought in the Southern District of Iowa, and the same judge again decided that the patent was valid and infringed.

An appeal was taken from the decree in this last mentioned case, which resulted in the Circuit Court of Appeals for the Eighth Circuit affirming Judge McPherson's decree and holding the Phillips patent valid and infringed. (*Newton Washing Machine Company v. Grinnell Washing Machine Company*, 222 Fed., 512.)

The Phillips Patent.

Phillips' invention relates to a gearing device for power-operated washing machines for family or domestic use, and is concerned with the problem of doing both the washing and wringing by power derived from the small electric motors or small gasoline engines now in universal use, instead of the old back-breaking method of operating a washer and a wringer separately by hand. Phillips' machine was a pioneer in this art. It has gone into universal use, and is being manufactured under license

contracts with your petitioner, by many manufacturers throughout the entire United States. The Phillips gearing device accomplished for the first time three essential and novel results.

First. It made the power-driven wringer safe against accidents and injury to

(a) The operator;

(b) The delicate garments being wrung through the wringer; and

(c) The wringer itself.

Second. It enabled the operator to complete a family washing in half the time it had ever been done before, by providing a structure capable of permitting the washing and wringing processes to go on simultaneously or independently, as desired; and

Third. It was so simple in its structure that the average washerwoman could instantly understand and operate it, and all of its various functions were controllable by a single lever.

Vast Property Interests Dependent Upon the Outcome of This Suit.

Since your petitioner, the Grinnell Washing Machine Company, became the pioneer of the manufacture and sale of power-operated domestic washing and wringing machines, substantially all of the manufacturers of domestic washing machines in this country have commenced the manufacture and sale of power-operated washing and wringing machines for domestic purposes, embodying the invention disclosed in the Phillips patent. Before and after the litigation which culminated in the decision of the Circuit Court of Appeals for the Eighth Circuit, a large number of manufacturers of these machines recognized the said Phillips patent and obtained

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license contracts from your petitioner, under which they have been since and now are manufacturing and selling these machines. Certain other manufacturers, particularly those located in the Seventh Circuit, are continuing the manufacture and sale of these machines in violation of the Phillips patent.

As evidenced by the fact that a large number of manufacturers have commenced the making and selling of these machines, it is apparent that they are going into general use and in a short time will be found in almost every household, thus illustrating the vast proportions of the property interests that are here in controversy.

The Diversity of Opinion Between the Court of Appeals of the Seventh Circuit in This Case and the Court of Appeals for the Eighth Circuit and Other Courts in the Prior Cases.

In every one of the suits in which this Phillips patent has been involved, the pleadings were essentially the same, the facts were essentially the same, the defenses were essentially the same and the arguments advanced by counsel for both parties were the same. This is shown by the respective opinions in these several cases. In all except the first case before the District Court of the Southern District of Iowa, counsel for both parties were the same.

Notwithstanding this, the Court of Appeals for the Seventh Circuit found that the patent was invalid as being for an aggregation, while all of the other courts that have considered this patent have held it to be valid and for a patentable combination.

In order to illustrate the fact that this question of technical "aggregation" has been one of the defenses most strenuously urged in all of the litigation concern-

ing this Phillips patent, we quote from the opinion of the Honorable Smith McPherson in the first case in which this Phillips patent was involved, as follows:

"At the argument, as well as for some time later, I was inclined to be of the opinion that these different elements and mechanisms when united were an aggregation only and therefore not the basis for a valid patent, but upon a re-reading of the record and by giving additional attention thereto and to the whole case, I have reached the conclusion that all these elements and mechanisms formed a combination both useful and the subject of an invention." (*Grinnell Washing Machine Company v. O. B. Woodrow et al.*, 209 Fed. 621.)

In the decision of the Court of Appeals for the Eighth Circuit, the case was argued by the same counsel on both sides as were engaged in the trial of the case in the Court of Appeals for the Seventh Circuit. The fact that this defense of aggregation was strenuously urged in the trial in the Court of Appeals for the Eighth Circuit is evidenced from the opinion (222 Fed. 512), from which the following quotation is made:

"There is no new element in the combination. Therefore, in order to be patentable the combined action must produce some new result, or an old result in a more efficient and economical manner. The new result in this instance is the washing and wringing of clothes at the same time in a *safe and convenient* way. This does not mean that one garment is washed and immediately thereafter passed through the wringer. It means that while some garments are going through the wringer, other garments are being washed, and that the two operations go on simultaneously. The wringer is made subject to perfect control by a lever *easily and safely manipulated by the operator*. The device possesses elements of *utility, novelty and invention*."

It is also worthy of attention in this connection that

in the opinion of the Court of Appeals for the Seventh Circuit it is stated that

“the only advantage attained (by the Phillips combination) is one of convenience.”

and that the other advantages so carefully set forth in the opinions of the other courts, to-wit, the advantage of safety, is wholly ignored. Furthermore, the Court of Appeals for the Seventh Circuit has wholly ignored in its opinion the other advantage, to-wit, that the Phillips machine is “economical,” and that by its use a family washing can be done in approximately half the time required by the use of any prior art machine.

There is, therefore, a direct and fundamental diversity of opinion on the same question of fact and law based upon the same presentations by counsel, between the Court of Appeals for the Seventh Circuit on one side and the Court of Appeals for the Eighth Circuit and the District Courts of both the Seventh and Eighth Circuits on the other side, and in addition to this it is apparent that the Court of Appeals for the Seventh Circuit wholly ignored important advantages attained by the use of Phillips' patented combination and decided the case on a technicality based on the erroneous assumption that there could be no patentable combination in a gearing device for washing machines and wringers, because said gearing device did not attain the impossible and permit the operator to wash and wring the same garment at the same time.

The Necessity for Review of the Decision of the Appeal Court for the Seventh Circuit.

There are three main reasons why the decision of the Court of Appeals for the Seventh Circuit should be reviewed and corrected by the Supreme Court.

First. A diversity of opinion on the same question between two Courts of Appeal lessens the confidence of the public in the administration of the patent law and tends to bring the system into disrepute.

Second. On account of the fact that a number of the large manufacturers of washing machines throughout the United States are engaged in the manufacture and sale of these gearing devices containing Phillips' invention, many of them licensed under the Phillips patent and others not, and substantially all of them manufacturing in one circuit and selling throughout the United States, an intolerable situation exists as to the manufacturer and his dealers, because as the matter now stands the Phillips patent has been judicially determined to be valid in the thirteen states of the Eighth Circuit; it has been judicially declared invalid in the three states of the Seventh Circuit; and is *prima facie* valid in the rest of the United States. In some places the rights of the owners of the Phillips patent and their licensees are secured to them; in other places these rights are denied, and in still other places they are in doubt. An endless number of suits would be necessary to terminate these disputes unless the matter can be settled once for all by this Supreme Court. Thus numerous manufacturers of and dealers in these washing machines, whether licensed or not, are hopelessly in confusion in regard to their rights. This situation tends to discourage rather than promote the progress of the industrial arts.

Third. In regard to this question of aggregation here in controversy, the Court of Appeals for the Seventh Circuit is a "house divided against itself." Within the past few years that court in patent cases of national importance has construed the technical rule of aggregation in different ways, in some instances very liberally with the result of upholding the patent, and in other instances very narrowly and technically with the result of defeating the patent, so that the bench and bar, seeking guidance as to the interpretation of the law of aggregation, are placed hopelessly at sea in attempting to square the diverse opinions of the Court of Appeals for the Seventh Circuit on this question of aggregation.

To illustrate the fact that the Court of Appeals for the Seventh Circuit is a "house divided against itself," so far as this question of aggregation is concerned, attention is directed to the case here sought to be reviewed. It must be apparent from a careful examination of the opinion (a copy of which is attached hereto), that the difficulty which has presented itself to the judges of the Court of Appeals for the Seventh Circuit is disclosed in the following quoted statement from the opinion:

"There has been some disposition shown by the courts to soften the rule laid down by Justice Matthews in *Pickering v. McCullough*, 104 U. S. 310. It is now conceded that the opinion taken as a whole did not justify the construction at first placed upon it."

That part of the opinion in *Pickering v. McCullough* undoubtedly referred to in the foregoing quoted statement is as follows:

"In a patentable combination of old elements, *all* the constituents must so enter into it, as that *each* qualifies every other."

Ever since the opinion in *Pickering v. McCullough* was handed down, the Patent Office has continued to grant

patents containing combination claims in which some one or more of the elements of the combination did not *qualify every other element*. In addition to this the courts have continued to sustain patents having combination claims in which one or more of the elements enumerated did not qualify every other element. This is particularly and specifically true of the Court of Appeals for the Seventh Circuit. For instance, in the case of *Krell Auto Grand Piano Co. of America v. Story & Clark Co. et al.*, 207 Fed., 946 (April 15, 1913), opinion by Judge Baker, the court said:

"In the books the word 'aggregation' is used in different senses."

The court then proceeded in a logical and convincing manner to show that the device there under consideration constituted a patentable combination and not an aggregation, even though

"the controlling levers C and the fall board F have no immediate relation to each other."

In this manner the Court of Appeals for the Seventh Circuit specifically departed from the teachings of *Pickering v. McCullough* if construed according to the strict interpretation of the above quoted excerpt from said opinion.

Again, in the case of *Oshkosh Grass Matting Co. v. Waite Grass Carpet Co.*, 207 Fed., 937 (April 15, 1913), opinion by Judge Kohlsaat, the Court of Appeals for the Seventh Circuit proceeded to "soften the rule laid down by Justice Matthews in *Pickering v. McCullough*," and stated in effect that even though each element did not in any sense modify or control every other element, nevertheless there was a sort of connection or co-operation among the various elements by reason of the fact that all of the elements were in a sense associated through the instrumentality of the grass twine itself passing from one to the other.

The case at bar, however, illustrates that the Court of Appeals for the Seventh Circuit has departed from its rule as laid down in the foregoing other cases, and has again reverted to the notion that the hereinbefore quoted part of the opinion in *Pickering v. McCullough* was to be given a literal interpretation, and proceeded to defeat the Phillips patent on the narrow and technical ground that because the Phillips patented device did not actually wash and wring the same identical garment at the same time it came within the teaching of *Pickering v. McCullough*.

If the court was right in its decisions in the piano player case and the grass twine case, it is wrong in its decision in the washing machine case at bar, but in any event, whether right or wrong, the decisions are wholly inconsistent with each other and this case should be reviewed and a rule should be laid down for the guidance of the courts to avoid the confusion and diversity of opinion now existing.

Conclusion.

It is submitted that the Supreme Court in *Pickering v. McCullough* did not intend to lay down a hard and fast rule by which it could be certainly determined whether or not any given patent claim to a combination was valid, when it stated:

“In a patentable combination of old elements, *all* the constituents must so enter into it, as that *each* qualifies every other.”

Undoubtedly the above quoted sentence was intended to be construed in connection with the context and applied to a case belonging to the same class as the case there under consideration.

It is now well recognized that it is impossible to formulate and clearly state any rule capable of universal application, whereby it may certainly be determined in

any given case if a device was produced as a result of the inventive act or was produced merely as the result of mechanical skill. Each case of this kind must stand or fall on its own merits.

It is submitted that it is just as impossible to formulate and clearly state any rule of aggregation as it is a rule of invention. Substantially all patent claims are "combination" claims, that is to say consisting of more than one element. Every patent claiming a "combination" should also stand or fall on its own merit dependent upon whether the mechanical arts have or have not been materially advanced by reason of the new "combination."

In any case where the life of a patent is at stake, the court should not blindly follow the mere terms or words of a decision based on an entirely different state of facts and an entirely different mechanism.

In the present instance the numerous advantages gained by the combination expressed in the claims of the Phillips patent should be considered. This device was a pioneer in the washing machine art, it has gone into universal use, it can be operated by the average washer-woman with *safety* and *convenience*, and by its use a family washing can be completed in *half the time* required with prior art devices.

For the reasons stated, it is respectfully submitted that the petition should be granted.

GRINNELL WASHING MACHINE COMPANY,

By J. B. LYMAN,

President.

CHARLES C. LINTHICUM,

RALPH ORWIG,

Counsel for Petitioner.

IN THE
UNITED STATES CIRCUIT COURT OF APPEALS
FOR THE SEVENTH CIRCUIT.

2285. OCTOBER TERM AND SESSION, 1915.

<p>E. E. JOHNSON COMPANY, <i>Appellant,</i> vs. GRINNELL WASHING MACHINE CO., <i>Appellee.</i></p>	<p>{</p>	<p>Appeal from the District Court of the United States for the Southern District of Illinois, Northern Division.</p>
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Before KOHLSAAT, MACK and ALSCHULER, *Circuit Judges.*

The District Court found claims 5, 6, 7 and 8 of patent No. 950,402, granted February 22, 1910, to W. F. Phillips for a gearing device especially adapted to the operation by power of washing machines and wringers, to be valid and infringed by appellant. In the proceedings, claim 6 was conceded to best set out the invention, and will be herein taken as typical of the subject-matter of this suit. It reads as follows, viz:

A gearing device of the class described, comprising a support, a power shaft mounted on the support, means for imparting a continuous rotary motion to the power shaft, an upright shaft 45 mounted in the support, a driving device for the upright shaft operatively connected with the power shaft and capable of imparting an alternating rotary motion to the upright shaft, a horizontal shaft 39, a driving mechanism for the said shaft 39 connected with the power shaft and capable of imparting a rotary motion to the shaft 39, and a controlling means applied to the driving device for the shaft 39, for reversing the movement thereof and also for operatively disconnecting the shaft 39 from the driving shaft.

Figs. 1, 2 and 7 of the drawings are as follows, viz:

[Drawings omitted.]

Fig. 1 shows a side elevation of the device mounted on a tub. Fig. 2 shows a top plain view thereof, and fig. 7 shows a detail plan of the actuating device of the wringer. The body portion of the washing machine 10 carries a cover 11. A wringer 12 is placed on the body portion. The washer and wringer are not elements of the patent. The greater part of the device of the patent is connected with and supported by the base 13, bolted to the body portion of the washing machine, on which base are the bearings 14 to receive the rotatably mounted power shaft 15. At its outer end shaft 15 carries a gear wheel 16 meshing with small gear 17 on the shaft which carries the fly-wheel. The application of power from the motor 23 through the pulley 22, belt 21 and the fly-wheel 20 will be readily understood. Mounted on the base 13 is a rotatable shaft 24 supported in bearings 25, having rotatably mounted thereon pinions 26 and 27 spaced apart and provided with ratchet clutch members 28 on their adjacent faces. Between pinions 26 and 27 is a hub 29 slidingly and non-rotatably mounted on the shaft 24 and having an annular groove 30, and on its outer faces ratchet clutch members or teeth 31, designed to coast with the teeth on the beveled pinions 26 and 27. The clutch member 29, by means of its connection with the lever 34, can be manually manipulated so as to reverse the movement of the wringer cylinders by throwing the clutch cam first into moving contact with the gear wheel 26 and then back to 27, or, when desired, the operator can throw the clutch into an inoperative position by throwing the arm 34 into the center notch provided for controlling the operation of the direction mechanisms. Even when the cam is at its inoperative position, the beveled pinions are in mesh with the beveled pinion 15a which is at the inner end of the power shaft 15 and furnishes power to the wringer device. The de-

vice for imparting this power to the wringer shaft 39—the sprocket wheels 36 and 38 and the sprocket chain 37—will be readily understood without further description thereof. The power shaft 15 carries a small gear wheel 40 for operating the washing machine. This part of the claimed patented device is operated by one of the well known methods whereby the stirrer shaft or dolly is given an oscillating motion by means not here in question, applied to the vertical shaft 45 on the support. The support, or lid, carrying the washing machine, is hinged and may be lifted up so as to release it from contact with the power shaft. In such case the wringer will be operated, if desired, alone. Without its being so out of mesh with the pinion on the power shaft, there is no way of operating the wringer without at the same time operating the washing machine, though, by means of the cam clutch device, the wringer may be at rest when the washing machine is in action. The power shaft is located above the longitudinal central portion of the base 13. The clothes constituting the wash may be removed by lifting the lid carrying the washing device which rests thereon. Then the contents of the tub can be removed manually and fed to the wringer, and back again if desired. There is no operative connection between the clothes in the tub and the wringer.

The defenses set up are invalidity, because of an unpatentable combination, also want of novelty in view of the prior art, and non-infringement.

The patent was twice sustained by the District Court for the southern district of Iowa and by the eighth Circuit Court of Appeals in *Newton Washing Machine Co. v. Grinnell Washing Machine Co.*, 222 Fed. Rep. 512. The decision of the District Court in this present cause was held to await the decision of the cause in the eighth circuit. Thereafter the order sustaining the patent and decreeing infringement and accounting was entered.

The errors assigned are (1) That the court erred in holding validity and ordering an accounting; (2) that the court erred in not holding the patent invalid because (a) of aggregation, (b) of anticipation, and (c) of non-patentable subject-matter; (3) that the court erred in not so limiting the scope of the patent as to differentiate it from appellant's device, and in not dismissing the bill for want of equity.

KOHLISAAT, Circuit Judge, delivered the opinion.

The most important question presented is, Do the facts disclose a combination or a mere aggregation? It is conceded that the washing gear, the wringing gear and the operating gear are all old. Efforts of appellant's counsel to ascertain just what the combination claimed by appellee was, were not entirely satisfactory. Appellee's expert witness was asked, "Is there any co-action whatever between the washing machine as such and the wringing machine as such, or any co-operation between them?" To which he replied, "I think there is. You can use both at the same time. You can be washing one batch of clothes while you are wringing out another batch in the course of the same operation of doing a *family washing*." In reply to the question, "What new result is performed by this gearing described in the Phillips patent and claimed in the claims in issue?"—the same witness replied, "As nearly as I can recall the prior art, the Phillips patent was the first to disclose a power driven dolly type of machine in which the user could use the machine for washing clothes and wringing them into one tub and out of another as occasion demanded, in the course of doing say, a *family washing*." When asked by appellant's counsel, "Suppose you have one blanket to wash—you put it in the washing machine and wash it. Then that day or the next you wring it.

Will you state in what way there is any coöperation between the action of these two machines, speaking, as I have been, of the Phillips machine?" Appellee's expert, after some colloquy, replied, "There is the structural coöperation or coaction that I explained before; inasmuch as you have one common support for them and a common power shaft and a common motor." When further asked as to whether there is not the same coaction between machines driven by a line shaft on the machine shop bench as there is between the washing machine and the wringer, the same expert again, after colloquy, replied: "Considered purely as a drive-shaft and the first element of the train of gearing, yes, but when you come to consider the action on the ultimate elements of the gears, that would be very different. In one case you have the final action on the clothing. In the other case, if I recall your illustration correctly, the final action is on the wood that is being put in shape." The same witness conceded that to drive one shaft from another shaft and to drive a reverse mechanism, so that a shaft may be driven in either direction or stop it, was old. When asked:

"The sum and substance of your position with regard to the claims in issue here would then appear to be this,—and please state yes or no,—whether I have correctly stated your position; if one take a dolly washing machine of the generally well known type that has been on the market and was on the market long prior to Phillips—if he placed on the tub of that washing machine a wringer in any of the usual places where a wringer is placed most conveniently, if he takes any kind of familiar mechanism for operating that dolly, all well known prior to Phillips, if he provides means for driving his wringer by power, with a reverse mechanism so the wringer may be driven in either direction, and couples the wringer drive mechanism, no matter what kind it may be, provided it includes a reverse

mechanism, and the dolly driving mechanism, with a common drive shaft, he will infringe the claims involved in this suit?"

this witness replied:

"I think your statement is a little bit broad in some particulars. As far as it goes, it is probably correct, but I would like to add that one claim; for instance, the sixth, provides that your reversing gearing must be of such a character that the controlling mechanism will allow the wringer rolls to be at rest in spite of the fact that the power shaft is running. Possibly your statement is rather broad with reference to claim 7, for instance, because I do not think you included the limitation of 'a hand lever for adjusting said controlling means' in your statement. Then, too, you omitted from your statement the limitation as to there being 'a prime mover carried by the support for imparting a continuous rotary motion to the power shaft.'

"Furthermore, as I understood your statement, you did not include any limitations as to the two trains of gearing leading from the wringer rolls and the dolly shaft to the common drive shaft, being properly designed on the one hand to rotate the wringer rolls at a practical speed, and on the other hand, being properly designed to swing the dolly shaft through the proper angle and at a proper speed.

"It seems to me that with the additions I have made by way of my answer, that the statement would be correct, but as it stood in your question, it is decidedly too broad."

In his brief, page 15, appellee's counsel say:

"He further realized that in order to make his machine of the greatest possible value to the housewife, he must greatly reduce the time required for an ordinary family washing by contriving a structure that would both wash and wring at the same time, not, of course, on the same garment, but upon different batches of the same washing."

At page 23 it is said:

"Applying this well settled rule to the instant

case, it is only necessary for the court to find that the Phillips washing machine accomplishes the old result, i. e., rubbing and squeezing the clothes, in a more convenient, facile and economical manner than was capable by the use of any prior art device."

Speaking of a so-called Shedlock device, on page 64 of the brief, the same counsel say:

"... but he [Shedlock] never had any notion of providing a unitary gearing to do all of the washing," etc.

Again, at page 73 of the brief:

"Clearly then, the reason why this Shedlock device does not belong to the same class of inventions as the Phillips device and the reason why it cannot be seriously considered as being a complete anticipation of the Phillips device, is that Shedlock never even considered the problem of providing a single unitary washing machine device that was capable of doing all of the work incident to a washing. He only contemplated doing the rubbing part of the washing process and contented himself with a mechanism for that purpose."

Again, at page 101 of their brief, appellee's counsel say:

"Not a single prior art machine for doing the work of a family washing by power has remained on the market since the appearance of the Phillips machine."

The only reference to the point now under consideration, contained in the said opinion of the eighth Circuit Court of Appeals, reads as follows:

"There is no new element in the combination. Therefore, in order to be patentable, the combined action must produce some new result, or an old result in a more efficient and economical manner. The new result in this instance is the washing and wringing of clothes at the same time in a safe and convenient way. This does not mean that the garment is washed and immediately thereafter passed through the wringer. It means that, while some

garments are going through the wringer, other garments are being washed and that the two operations go on simultaneously. The wringer is made subject to perfect control by a lever easily and safely manipulated by the operator. The device possesses elements of utility, novelty and invention. The washing machine and wringer are, by the gearing device, made to act jointly and a new and useful result is produced. The device is therefore patentable."

Thus we have assigned as grounds for holding the device to be a valid combination, first, the structural co-operation based upon the facts of a common support, a common power shaft and a common motor; and, second, a new result or an old result attained in a more efficient and economical manner, viz., (a) doing a *family washing*, (b) the wringer and washing device are made to act jointly, i. e., to operate at the same time, when desired.

There is no pretense that the operation of the one affects that of the other. The operator must stop the washing machine by lifting up the tub-lid before the clothes of that washing can be inserted in the wringer. The tub mechanism does not feed to the wringer. Its ultimate mission is ended when the lid is lifted. The work of feeding the wringer is exactly the same as it would be were the wringer located on some other support equally convenient, although driven by some independent source of power. The two machines severally produce the identical result in the alleged combination which they produce when used independently. There is no relative motion of the two which contributes to or constitutes a new result. As before stated, the actuating mechanism is old and produces no new result. The fact that the two devices have the same support does not tend to show combination. The earth is the common support of all supported things. That fact suggests no thought of relation. Nor do we think that *doing the*

family washing can be claimed as an improved result. Else one might add to the device of the patent an old dry-kiln, ironing board and heated flat-iron and have a patented family laundry. The only advantage obtained is one of convenience. The two machines could both be operated on the same support by different actuating means attached to the same tub, running at the same time and requiring no more regulating and protecting features than those of the patent. We do not find one element of coercion or co-operation between the washer and the wringer, or one patentable or improved result from their association on the tub. The action of the wash woman in taking the clothes from the tub and feeding them to the wringer results in nothing new. No unitary result is produced.

In the so-called capstan case, *Morris v. McMillin*, 112 U. S. 244, it was held that no invention was involved in merely operating by steam what was theretofore operated by other agencies. So that there is no more invention in the patent in suit than there would be were each machine operated by hand. What constitutes a patentable combination has frequently been before the courts. Mr. Justice Curtis, in *Forbush v. Cook*, 2 Fisher 669 (1859) says, "To make a valid claim for a combination, it is not necessary that the several elementary parts of the combination should act simultaneously. If those elementary parts are so arranged that the successive action of each contributes to produce some one practical result, which result when attained is the product of the simultaneous or successive action of all the elementary parts, viewed as one entire whole, a valid claim for thus combining those elementary parts may be made."

In *San Francisco Bridge Co. v. Keating*, 68 Fed. Rep. 353, the Circuit Court of Appeals for the ninth circuit approved an instruction which reads: "Invention is that which brings out of the realms of the mind some-

thing that never existed before. It may consist in the combination of old elements, the invention being in the combination. To make it so, there must be a joint action or operation of the elements, i. e., the elements must coöperate or act jointly to produce the result or object of the combination, or else the assembled elements is [constitute] a mere aggregation, and is not patentable. It is not necessary, however, that their action should be simultaneous. They may be successive."

The Supreme Court, in *Burt v. Ivory*, 133 U. S. 349, says it is not invention to combine old devices into a new machine or manufacture without producing any new mode of operation. To the same effect are *Florsheim v. Schilling*, 137 U. S. 77; *Morgan Envelope Co. v. Albany Paper Co.*, 40 Fed. Rep. 582; and *Mahon v. McGuire Mfg. Co.*, 51 Fed. Rep. 684.

The argument supporting a combination in the present case is fully met by the Supreme Court in the so-called lead pencil case, *Reckendorfer v. Faber*, 92 U. S. 347. The element of convenience, here so much asserted, was in that case given no consideration. The Circuit Court of Appeals for the second circuit, in *American Chocolate Machine Co. v. Helm Steler Co.*, 142 Fed. Rep. 978, 980, held that "The distinction between a combination and an aggregation lies in the presence or absence of mutuality of action. To constitute a combination it is essential that there should be some joint operation performed by its elements, producing a result due to their joint and coöperating action."

There has been some disposition shown by the courts to soften the rule laid down by Justice Matthews in *Pickering v. McCullough*, 104 U. S. 310. It is now conceded that the opinion taken as a whole did not justify the construction at first placed upon it. Fairly read, its true meaning is well stated by Mr. Merwin in his

book entitled "Patentability of Inventions," as follows:

"It may be gathered from this case that in a patentable combination there must be a new inter-reaction of some sort between the several elements.

"It is not sufficient that one element is ineffective without the others—that its function is useless except in combination with other functions, but the function of one must be modified in some way by the function of another, so that the function of one element is not the same in combination that it was in the place whence it was taken; a peculiar function must be developed in the combination. This need not be true of every element in the combination, but it must be true of some one element, or of several elements, and the virtue of the combination must inhere in this peculiarity of function developed by it."

The opinion was cited in *Palmer v. Corning*, 156 U. S. 343, and in many other cases.

In *Spear Stove and Heating Co. v. Kelsey Heating Co.*, 158 Fed. Rep. 622 (C. C. A. 3rd Cir.), it was held that where the elements relied on merely brought to the alleged combination their own several functions, the patent was not valid. The assembly of a damper in the middle flue of a three-flue stove and a portable base plan did not involve invention. *Bussey v. Excelsior Mfg. Co.*, 110 U. S. 131. Merely bringing of the devices into juxtaposition where each could work out its own result was held not to be invention. *Hailes v. Van Wormer*, 20 Wall. 353; *Palmer v. Corning*, *supra*; so also, *Heald v. Rice*, 104 U. S. 734; *Hendy v. Iron Works*, 127 U. S. 370; *McCarthy v. Lehigh Valley R. R. Co.*, 160 U. S. 110; *Union Edge Setter Co. v. Keith*, 139 U. S. 530, 539.

In *Thatcher Heating Co. v. Burtis*, 121 U. S. 286, it is said: "There is no specific quality of the result [of the association of the elements] which cannot be definitely assigned to the independent action of a single element.

There is therefore no patentable novelty in the aggregation of the several elements, considered in itself." To the same effect are *Fon du lac County v. May*, 137 U. S. 395; *Brinkerhoff v. Aloe*, 146 U. S. 515; *Double Pointed Tack Co. v. Two Rivers Mfg. Co.*, 109 U. S., 117; *Wright v. Yeungling*, 155 U. S. 47; *Mossler Safe Co. v. Hossler*, 127 U. S. 354; *Office Specialty Mfg. Co. v. Fenton Metallic Mfg. Co.*, 174 U. S. 492, 498; *Warner Instrument Co. v. Stewart & Clark Mfg. Co.*, 185 Fed. Rep. 507; *Alexander v. DeMoulin Bros. & Co.*, 199 Fed. Rep. 145. This court has given this question careful consideration in *Railroad Supply Co. v. Hart Steel Co.*, 222 Fed. Rep. 261, where the defense of aggregation was overruled.

"Unless the combination accomplishes some new result, the mere multiplicity of elements does not make it patentable. So long as each element performs some old and well known function, the result is not a patentable combination but an aggregation of elements," says the court in *Richards v. Chase Elevator Co.*, 158 U. S. 299.

The presumption of validity growing out of the grant is strongly relied upon by appellee to sustain the patent. In *Palmer v. Corning*, *supra*, the court says "There is no doubt that in this, as in all similar cases, the letters patent are *prima facie* evidence that the device was patentable; still we are always required, with this presumption in mind, to examine the question of invention *vel. non* upon its merits in each particular case." In the present case we have no hesitancy in holding that the presumption of validity has been overcome.

While we have great respect for the opinion of the eighth Circuit Court of Appeals, the decision of that court herein does not convince us that the device of the patent constitutes a valid combination. Had this phase of the case been as thoroughly presented to the District

Court as it has been here, we think the decision must have been otherwise.

In view of our conclusion as to aggregation, we do not deem it necessary to consider the other questions raised in the record. The decree of the District Court is reversed, with the direction to dismiss the bill for want of equity.

A true Copy.

Teste:

*Clerk of the United States Circuit Court of
Appeals for the Seventh Circuit.*

IN THE

DISTRICT COURT OF THE UNITED STATES

FOR THE SOUTHERN DISTRICT OF ILLINOIS, NORTHERN
DIVISION.

GRINNELL WASHING MACHINE COMPANY,	}
<i>Complainant,</i>	
<i>vs.</i>	
E. E. JOHNSON COMPANY,	}
<i>Defendant.</i>	

Opinion.

Two questions are involved:

1st. Does the Phillips machine show patentable novelty?

2nd. Is defendant's machine an infringement of the Phillips patent?

Much litigation over this patent has preceded this case. The same questions were involved and the same counsel appeared. In argument here, both sides ex-

pressed confidence in coming decision of the Court of Appeals of the Eighth Circuit in the case of *Newton Washing Machine Company v. Grinnell Washing Machine Company* to sustain their respective contentions. The decision in the Newton case was handed down February 17, 1915, holding that

"the Phillips patent is a combination of old elements producing a new and useful result, or an old result in a more facile, economical and efficient manner that it is not shown to have been anticipated, and it is therefore patentable."

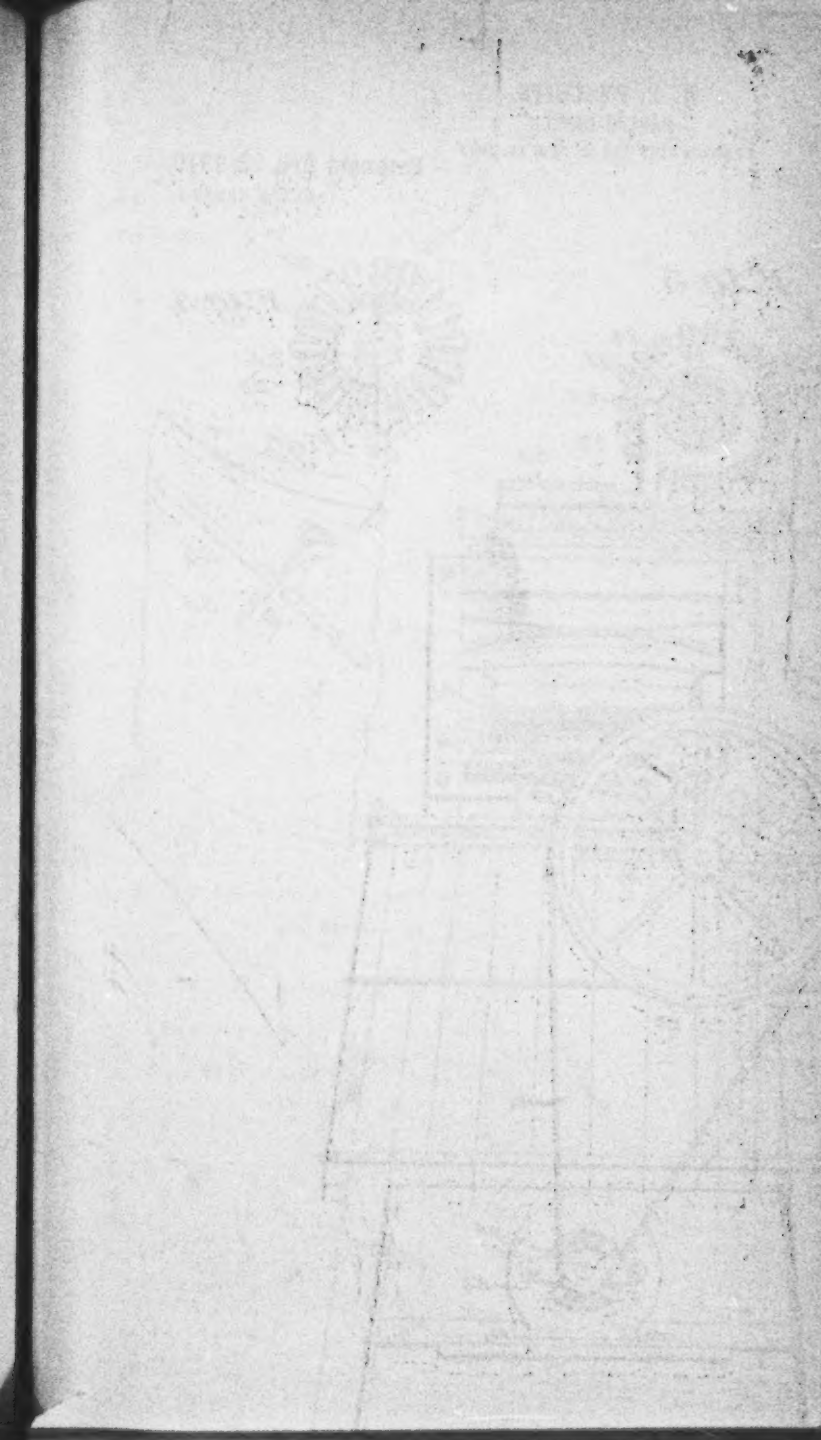
The court also held the Newton patent to be an infringement on the Phillips patent.

The finding of the Court of Appeals of the Eighth Circuit in the Newton case accords entirely with the impressions I received on the trial of the case at bar. The defendant, however, introduced additional evidence of prior use by one Fisher. I have considered carefully all that the record shows on this subject, and find it unsatisfactory.

I am therefore of opinion that the Phillips device shows patentable novelty, and that the defendant's device is an infringement thereof. Counsel for complainant may submit form of decree.

J. OTIS HUMPHREY,
United States District Judge.

March 22, 1915.



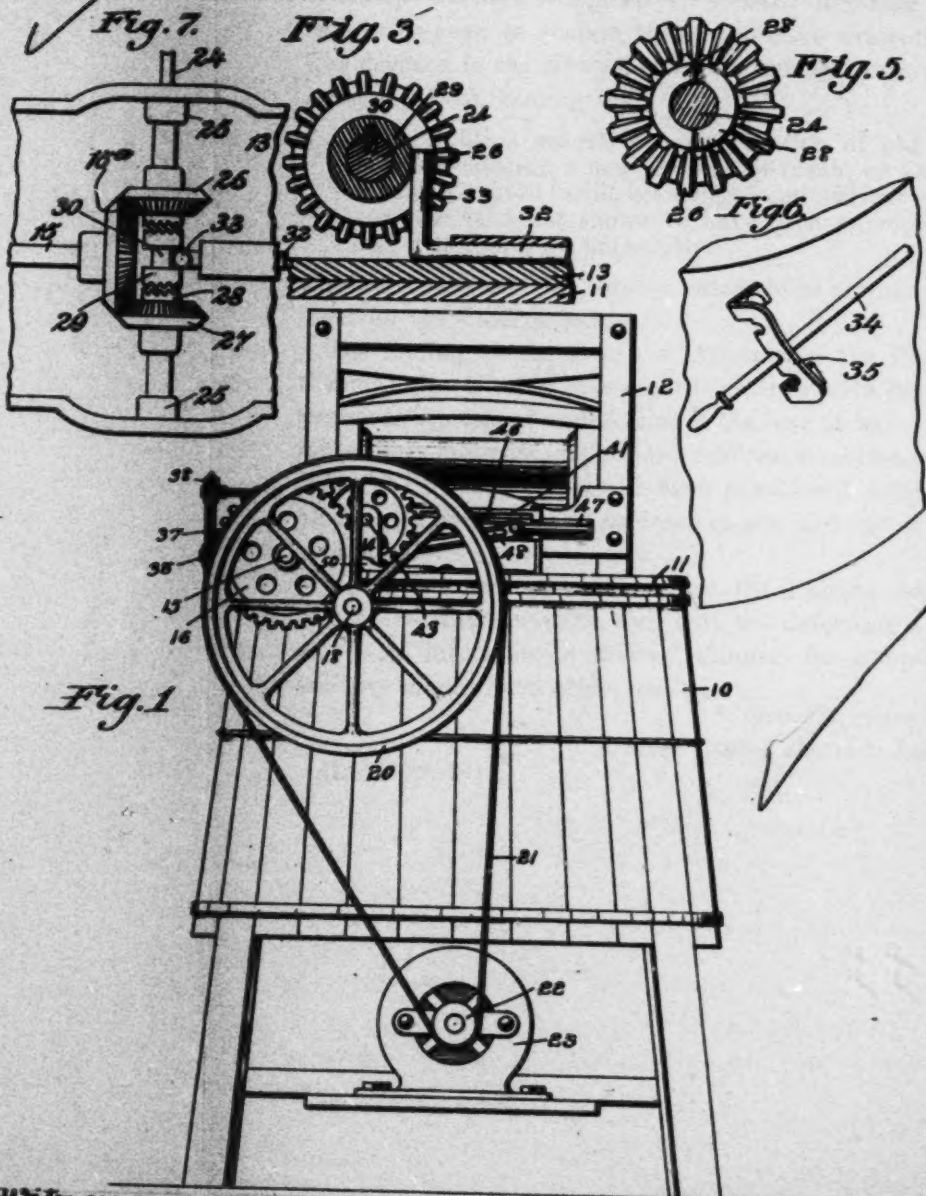
W. F. PHILLIPS.
GEARING DEVICE.

APPLICATION FILED JAN. 16, 1909.

Patented Feb. 22, 1910.

3 SHEETS—SHEET 1.

950,402.



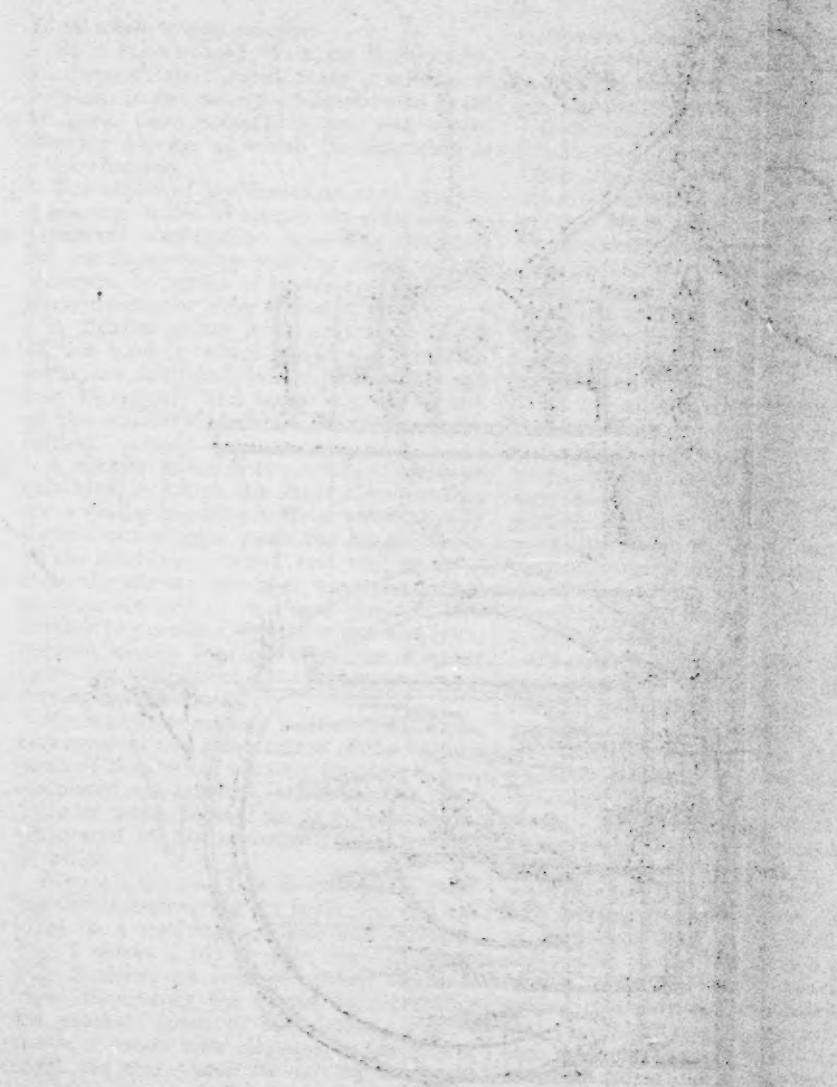
Witnesses.

F. C. Dahlberg.
A. S. Hogue

Inventor:

William F. Phillips.
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UNITED STATES
DEPARTMENT OF AGRICULTURE
BUREAU OF PLANT INDUSTRY
WASHINGTON, D. C.



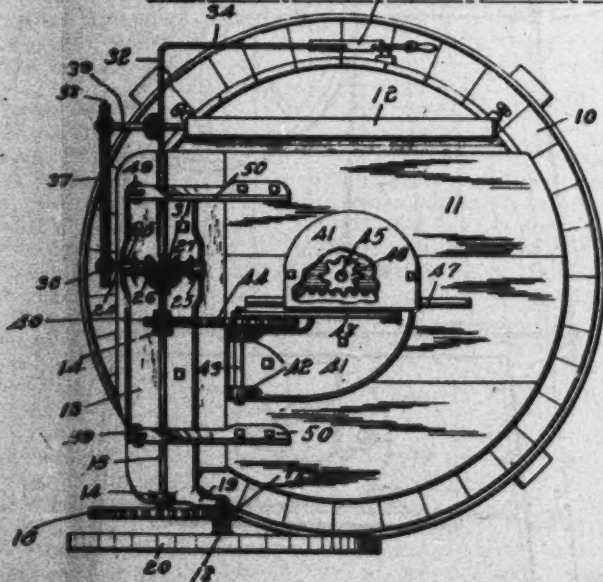
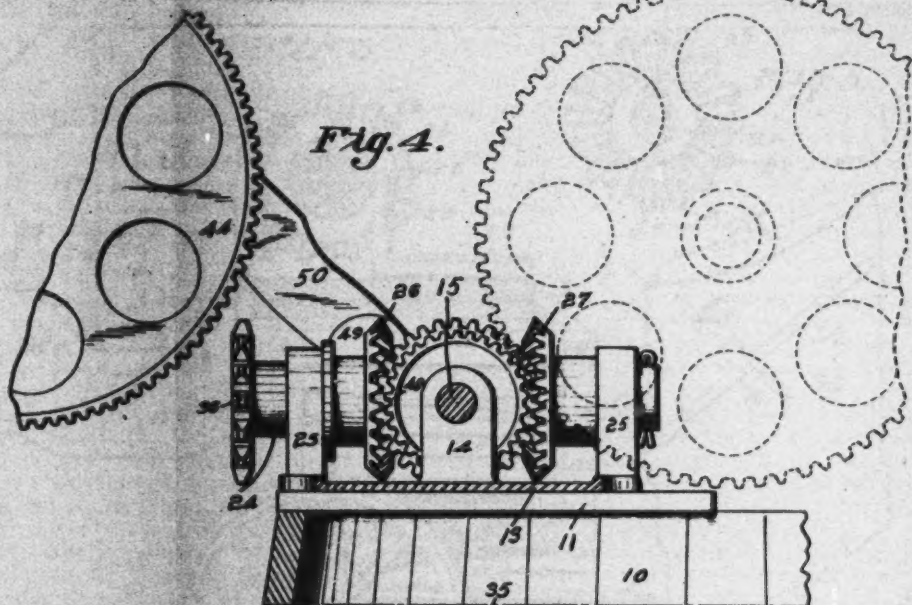
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950,402.

W. F. PHILLIPS.
GEARING DEVICE.
APPLICATION FILED JAN. 15, 1909.

Patented Feb. 22, 1910.

3 SHEETS—SHEET 2.



Witnesses.

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UNITED STATES PATENT OFFICE.

WILLIAM F. PHILLIPS, OF NEWTON, IOWA.

GEARING DEVICE.

950,402.

Specification of Letters Patent.

Patented Feb. 22, 1910.

Application filed January 15, 1909. Serial No. 673,481.

To all whom it may concern:

Be it known that I, WILLIAM F. PHILLIPS, a citizen of the United States, residing at Newton, in the county of Jasper and State of Iowa, have invented a new and useful Gearing Device, of which the following is a specification.

The object of my invention is to provide a gearing device of simple, durable and inexpensive construction, especially designed for use in operating washing machines and wringers, by means of power applied by an electric motor or other source of power.

A further object is to provide a device of this kind in which all of the operative parts are arranged in compact form, and may be quickly and easily applied to any of the ordinary machines of the class described.

A further object is to provide a device of this kind in which the shaft for operating the washing machine will be automatically thrown out of gear when the hinged cover of the machine is raised, and will be automatically thrown into gear when the hinged cover is lowered to its closed position, and further to provide simple, durable and inexpensive means for throwing the wringer operating mechanism out of gear, or for reversing its movement.

My invention consists in the construction, arrangement and combination of the various parts of the device, whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claims and illustrated in the accompanying drawings, in which—

Figure 1 shows a side elevation of a gearing device embodying my invention and applied to a washing machine and wringer. Fig. 2 shows a top or plan view of same. Fig. 3 shows an enlarged detail sectional view illustrating the means for operating the ratchet clutch of the device. Fig. 4 shows a detail view illustrating the power shaft, the gear wheels for driving the washing machine, and the gearing device for operating the wringer. The dotted lines in said figure show the position of the gear wheel for operating the washing machine, in mesh with the gear wheel on the power shaft, and the solid lines show said gear wheel in the position it would assume when the cover is elevated, and Fig. 5 shows a detail view of one of the beveled gear wheels, to illustrate the ratchet face thereon. Fig.

6 shows a detail view illustrating the rack for supporting the gear wheel adjusting lever, and Fig. 7 shows a top or plan view of the gearing device for operating the wringer.

Referring to the accompanying drawings, I have used the reference numeral 10 to indicate the body portion of the washing machine on which a cover 11 is mounted. A wringer 12 is placed on the body portion. In this connection, it is to be understood that neither the washing machine nor the wringer constitutes any part of my present invention, and are illustrated and described herein only for the purpose of showing a practical application of my improved gearing device.

My improved gearing device is in the nature of an attachment that may be readily and quickly applied to any of the ordinary forms of machines of the class herein shown and described. The major portion of the gearing device is connected with and supported by a base 13, which may be bolted to the body portion of a washing machine, and which is provided with bearings 14 to receive the power shaft 15 which is rotatably mounted therein.

On one end of the power shaft 15 is a gear wheel 16 which is in mesh with a smaller gear wheel 17 which is rotatably mounted on a short shaft 18, supported by a bracket 19 on the base 13. A balance wheel 20 is also fixed to the shaft 18, and I have provided for operating the power shaft 15 by placing the belt 21 on the balance wheel 20, and connecting the said belt with a pulley 22 operated by a motor 23, which motor may be located beneath the body of the machine and on the other end of the power shaft is a beveled pinion 15^a.

Mounted on the base 13 is a shaft 24, rotatably supported in the bearings 25 and having rotatably mounted thereon two beveled pinions 26 and 27 spaced apart from each other, and provided with ratchet clutch members 28 on their adjacent faces. Between the beveled pinions 26 and 27 is a hub 29 slidingly and non-rotatably mounted on the shaft 24 and provided with an annular groove 30, and also having on its outer faces ratchet clutch members 31 designed to co-act with the ratchet clutch member 28.

For operating the sliding clutch member 29, I have provided a shaft 32 mounted in the base 13, and having an upwardly extended arm 33 arranged in the groove 30.

On the outer end of the shaft 32 is a crank arm 34, and a notched rack 35 of the ordinary construction is provided to receive the arm 34, and support it in any position in which it may be placed. When said arm 34 is at its center, the hub 29 is between the pinions 26 and 27, and hence neither of them will be operated, and when the arm 34 is moved in one direction away from the center, the clutch device will engage the beveled pinion 26, and thus rotate the shaft 24 in one direction, and when the arm 30 is moved in the opposite direction from the center, the shaft 24 will be rotated in an opposite direction. Both of said beveled pinions 26 and 27 are normally in mesh with the beveled pinion 15.

On the end of the shaft 24 is a sprocket wheel 36 connected by a sprocket chain 37 with a sprocket wheel 38 on the shaft 39 of a wringer. Fixed to the shaft 15 is a small gear wheel 40 for operating the washing machine.

The device for imparting motion from the power shaft 15 to the washing machine comprises a base 41 designed to be bolted to the hinged portion 11 of a washing machine. This base is provided with bearings 42 to receive a shaft 43, which shaft is provided with a gear wheel 44 normally in mesh with the gear wheel 40.

The shaft of the washing machine is indicated by the numeral 45, and is provided with a pinion 46. This pinion is in mesh with a rack bar 47, slidably mounted in the base 41, and connected by means of a pitman 48 with the gear wheel 44, so that when the gear wheel 44 is continuously rotated in one direction, an alternating rotary motion will be imparted to the shaft 45.

The power shaft 15 is located at about the longitudinal central portion of the base 13. Near the outer edge of the base 13 are two upright hinge members 49 and pivoted to them are the hinge members 50, which latter extend over the power shaft and are bolted to the cover 11. By this arrangement, it is obvious that when the cover is raised, the gear wheel 44 will move upwardly and away from the gear wheel 40, as clearly illustrated in Fig. 4, so that the gear wheel 44 is automatically thrown out of engagement with the gear wheel 40 when the cover is raised.

In practical operation, power is applied to the balance wheel 21, and during the process of washing and wringing clothes, it is not necessary to stop the motor that is operating the balance wheel. During the time that the hinged member is in its closed position, the shaft 45 will receive an alternating rotary motion. Any time that the operator desires to inspect the interior of the washing machine, he need only raise the cover, whereupon the washing machine is automatically

thrown out of gear, and as soon as the cover is lowered, the washing machine is again thrown into gear. This is all done automatically, and without any attention on the part of the operator. When the cover of the washing machine is raised, the operator may have access to the contents of the washing machine, and these may then be placed between the rollers of the wringer, and the movement of the wringer may be readily and easily controlled by a manipulation of the crank arm 34 of the shaft 32.

One of the desirable and advantageous features of my invention is that all of the operative parts are closely assembled on a base connected with the machine body, and a second base connected with the hinged cover, and hence, all of the parts are firmly supported and are not liable to get out of order, or to lose their accurate adjustment with relation to each other.

I claim as my invention:

1. An improved gearing device, comprising a stationary support, a supporting member hinged to the stationary support, a power shaft on the stationary support, a gear wheel thereon, a gear wheel rotatably mounted on the hinged supporting member, hinges for connecting the hinged portion with the body portion, said hinges having their pivotal points so arranged with relation to the power shaft that when the hinged supporting member is raised, the said gear wheel on it will be moved upwardly and rearwardly out of engagement with the gear wheel on the power shaft, an upright shaft connected with the hinged supporting member, a pinion thereon, a rack slidably supported in mesh with said pinion, and a pitman connected with the gear wheel on the hinged supporting member and also with said rack.

2. An improved gearing device, comprising a stationary support, a base fixed thereto, a power shaft mounted on said base, a shaft arranged transversely of the power shaft and mounted on said base, hinge members mounted on the base, a short shaft rotatably mounted on the base, means for gearing the short shaft to the power shaft, a balance wheel on the short shaft, a small gear wheel on the power shaft, a supporting member hinged to the stationary support, hinge members fixed thereto and extended over the power shaft and connected with the hinge members on said base, a base plate fixed to the hinged supporting member, a shaft mounted on said base plate, a gear wheel on said shaft capable of meshing with the gear wheel on the power shaft, an upright shaft mounted in the hinged supporting member, means actuated by the gear wheel on the hinged supporting member for imparting an alternating rotary motion to the upright shaft by a continuous rotary

motion of said gear wheel, and means interposed between the power shaft and the transverse shaft on the first mentioned base for throwing the transverse shaft out of gear or for rotating it in either direction.

3. In a device of the class described, the combination of a stationary support, a supporting member hinged to the stationary support, a power shaft rotatably mounted on the stationary support, a gear wheel connected with it, an upright shaft mounted in the hinged supporting member, a gear wheel mounted on the hinged supporting member, a gear wheel on the power shaft in mesh with the gear wheel on the hinged supporting member, and hinge members connecting the stationary support with the hinged supporting member and extended from the hinged supporting member over the shaft on the stationary support and attached to the stationary support so that when the hinged supporting member is elevated, the gear wheels will move to position out of mesh with each other, and means whereby the gear wheel on the hinged supporting member, when continuously rotated, will impart an alternating rotary motion to the vertical shaft in the hinged supporting member.

4. In a gearing device of the class described, the combination of a support, a power shaft mounted thereon, an upright shaft, means interposed between the power shaft and the upright shaft for imparting an alternating, rotary motion to the latter by a continuous rotary motion of the former, a shaft arranged transversely of the power shaft, and gearing devices interposed between said transverse shaft and the power shaft for imparting a continuous rotary motion in either direction to the transverse shaft, and for throwing said transverse shaft out of gear with the power shaft.

5. A gearing device of the class described, comprising a support, a power shaft mounted on the support, means for imparting a continuous rotary motion to the power shaft, an upright shaft 45 mounted in the support, a driving device for the upright shaft operatively connected with the power shaft and capable of imparting an alternating rotary motion to the upright shaft, a horizontal shaft 39, a driving mechanism for the said shaft 39 connected with the power shaft and capable of imparting a rotary motion to the shaft 39, and a controlling means applied to the driving device

for the shaft 39, for reversing the movement thereof.

6. A gearing device of the class described, comprising a support, a power shaft mounted on the support, means for imparting a continuous rotary motion to the power shaft, an upright shaft 45 mounted in the support, a driving device for the upright shaft operatively connected with the power shaft and capable of imparting an alternating rotary motion to the upright shaft, a horizontal shaft 39, a driving mechanism for the said shaft 39 connected with the power shaft and capable of imparting a rotary motion to the shaft 39, and a controlling means applied to the driving device for the shaft 39, for reversing the movement thereof and also for operatively disconnecting the shaft 39 from the driving shaft.

7. A gearing device of the class described comprising a support, a power shaft mounted on the support, means for imparting a continuous rotary motion to the power shaft, an upright shaft 45 mounted in the support, a driving device for the upright shaft operatively connected with the power shaft and capable of imparting an alternating rotary motion to the upright shaft, a horizontal shaft 39, a driving mechanism for the said shaft 39 connected with the power shaft and capable of imparting a rotary motion to the shaft 39, a controlling means applied to the driving device for the shaft 39, for reversing the movement thereof, and a hand lever for adjusting said controlling means.

8. A gearing device of the class described, comprising a support, a power shaft mounted on the support, a prime mover carried by the support for imparting a continuous rotary motion to the power shaft, an upright shaft 45 mounted in the support, a driving device for the upright shaft operatively connected with the power shaft and capable of imparting an alternating rotary motion to the upright shaft, a horizontal shaft 39, a driving mechanism for the said shaft 39 connected with the power shaft and capable of imparting a rotary motion to the shaft 39, and a controlling means applied to the driving device for the shaft 39, for reversing the movement thereof.

Des Moines, Iowa, December 9, 1908.

WILLIAM F. PHILLIPS.

Witnesses:

M. B. GOLDIEN,
GEORGE MANKIE.

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JAMES D. HANER
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IN THE

SUPREME COURT OF THE UNITED STATES

OCTOBER TERM, A. D. 1916.

No. ~~61~~ 272

GRINNELL WASHING MACHINE COMPANY,
Petitioner.

vs.

E. E. JOHNSON COMPANY,
Respondent.

Reply to Petition for Writ of Certiorari.

TAYLOR E. BROWN,
CLARENCE E. MEHLHOPE,
Counsel for E. E. Johnson Co.

CHAMBERLAIN LAW PRINTING CO.

IN THE
Supreme Court of the United States

OCTOBER TERM, A. D. 1916.

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GRINNELL WASHING MACHINE COMPANY,
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Respondent.

Reply to Petition for Writ of Certiorari.

*To the Honorable, the Chief Justice and Associate
Justices of the Supreme Court of the United
States:*

1. The first ground suggested in the petition for writ of certiorari in this case is that the Circuit Court of Appeals for the Seventh and the Eighth Circuits have decided directly contrary to each other on the same claims of the same patent in suit, in cases having substantially the same records, presented upon substantially the same defenses and the same arguments:—the Seventh Circuit Court in the *Johnson* case, having decided the patent to be in-

valid on the ground that its claims cover an aggregation and not a patentable combination, and the Eighth Circuit Court in the *Newton* case, having decided the claims of the patent to be for patentable combinations, and therefore valid.

We respectfully submit that the records in the two cases will not show that they are the same or substantially the same, or that the same or substantially the same defenses were presented to the two courts. Different evidence and new defenses were presented in the *Johnson* case. The alleged infringing machine was quite different from those held to infringe in the prior cases.

We apprehend that this court will be concerned at this time only with the fact that the Phillips patent was held valid in the Eighth Circuit and invalid in the Seventh Circuit, and that it will grant or refuse to grant the writ merely upon such diversity of conclusion.

2. The second ground for urging the granting of the writ is set forth in the petition under the head of "Antecedent Litigation." The fact that the district judge in the first case (*Automatic Co.* case) brought on this Phillips patent and from whose decision *no appeal was taken*, held the Phillips patent to be valid and held it to be valid a second time in the *Newton* case, and the fact that the Court of Appeals of the Eighth Circuit affirmed the District Court's opinion in the *Newton* case, were considered persuasive and binding upon the District Court for the Southern District of Illinois in the case at bar against the E. E. Johnson Company (see opinion, Pet. p. 26); but the reaching of different results by

different Circuit Courts of Appeal is not, *per se*, a sufficient ground for the granting of the writ.

3. On page 8 of the petition, the fact is recited that a number of licenses have been granted under the Phillips patent; that since this patent has been held valid in the thirteen states of the Eighth Circuit, invalid in the three states of the Seventh Circuit, and is *prima facie* valid in the rest of the United States, an endless number of suits would be necessary to terminate litigation unless the matter could be settled once and for all by this Supreme Court. This same situation is presented in practically every patent case where a petition for certiorari is filed, based upon diversity of rulings of two Courts of Appeal. Similar "vast property interest involved" and hopeless confusion with respect to the rights of manufacturers, were set forth before this court in a petition for writ of certiorari, directed to the Second Circuit Court of Appeals, in the case of *Montgomery Ward & Company, Petitioners v. Iowa Washing Machine Company*, docket No. 1036, October term, 1915. Nevertheless, this court was not influenced by such circumstances and on 12th day of June, 1916, refused to grant the petition.

4. On page 9 of the petition, the novel proposition is set forth that on the "question of aggregation here in controversy, the Court of Appeals for the Seventh Circuit is 'a house divided against itself,'" having "construed the technical rule of aggregation in different ways" with the result that "the bench and bar, seeking guidance as to the interpretation of the law of aggregation, are placed

hopelessly at sea in attempting to square the diverse opinions of the Court of Appeals for the Seventh Circuit on this question of aggregation" (Pet., p. 9).

It is not true that the case of *Grinnell v. Johnson*, at bar, raised the question or had any jurisdiction to raise the question whether or not the Court of Appeals for the Seventh Circuit was making rulings consistent or inconsistent with its previous rulings. *That question is not in issue here.* The correctness of the decision of that court in the *Auto Grand Piano* case (207 Fed. 946, Apr. 15, 1913), cited page 10 of the petition, was apparently understood by the parties litigant and counsel. At any rate, this court has not been called upon to review *that* decision. The alleged conflicting case of *Oshkosh Grass Matting Company* (207 Fed. 937), decided on the same day, Apr. 15, 1913, likewise seems to have been fully understood and accepted by the parties litigant and counsel for this court has not been called upon to review *that* decision. As a matter of fact, the decisions in those two cases are not only in harmony with each other but are in full accord with the decisions of this court.

No question of public policy is involved, and certainly the pleadings in this case do not bring before this court for review, the question as to whether or not the Seventh Circuit Court of Appeals is "a house divided against itself."

If counsel for the petitioner are as they admit, "hopelessly at sea" on the law of "aggregation," the time of this court should not be consumed and public and private moneys expended, in an attempt

to enlighten them, since the decisions of this court on the subject are published and open to their inspection. The law of aggregation was long ago laid down in the decisions of this Supreme Court. These decisions have been so numerous that no exigencies of circumstances or of public policy require any restatement of the law, especially as in this, *Johnson* case, the Seventh Circuit Court of Appeals has cited and followed the rule and reasoning laid down by this court.

5. The Phillips patent is referred to on pages 3 and 4 of the petition, and in the closing paragraph thereof, on page 12. It is respectfully submitted in opposition to the petition, that the patent evidences *on its face* (a) that its claims are for mere aggregations and not patentable combinations; (b) that both the patent and the claims in issue disclose a lack of patentable ingenuity and therefore lack of invention. The Court of Appeals for the Seventh Circuit might, with equal propriety, have directed the dismissal of the bill upon the ground that the Phillips patent showed lack of patentable ingenuity and invention.

6. The Phillips patent is for a washing machine mounted on the same support with a wringing machine, both being power-driven from the same motor, and provided with a reversing device associated with the wringer mechanism. The finding of the Court of Appeals of the Seventh Circuit was: "It is conceded that the washing gearing, the wringing gearing and the operating gear, are all old" (Pet., p. 16). The Eighth Circuit Court of Appeals held that "there is no new element in the combina-

tion" (Pet., p. 19). No new result was produced by the Phillips combination. See opinion (Pet. pp. 16 and 17) quoting admission of petitioner's expert witness.

The record in the case at bar discloses that it was old to combine in one unitary structure, a particular washing machine gearing, and a particular wringer gearing, both operated from a single motor (see Woodrow patent). The record also discloses, in the Shedlock British patent, a combined power-driver washing and wringing machine having a reversing device to reverse the operation of the wringer. The record also discloses in a book called "507 Mechanical Movements," a device designated as No. 53, identical in construction, function and operation with the reversing device disclosed in the Phillips patent. There could have been no patentable ingenuity or invention, and no inventive act involved, in substituting a particular reversing device, to wit, No. 53, for the reversing device of the Shedlock patent. Likewise, there could have been no patentable invention or inventive ingenuity in adding to the power-driven washing and wringing mechanism of the Woodrow patent, the old No. 53 reversing mechanism for the wringer, after Shedlock had disclosed to the world the use of a reversing mechanism in a combined power-driven washing and wringing machine.

Therefore, it is perfectly manifest that even if this court should be moved to grant the petition upon the mere ground of diversity of ruling as to the validity of the Phillips patent, the same con-

clusion arrived at by the Seventh Circuit will ultimately be reached, to wit: that the patent is invalid because that conclusion may be based upon either or both of the two grounds: aggregation and lack of invention.

The petition should be denied.

Respectfully submitted,

TAYLOR E. BROWN,

CLARENCE E. MEHLHOPE,

Counsel for E. E. Johnson Co.

Chicago, 26th September, 1916.

**GRINNELL WASHING MACHINE COMPANY v.
E. E. JOHNSON COMPANY.**

**CERTIORARI TO THE CIRCUIT COURT OF APPEALS FOR THE
SEVENTH CIRCUIT.**

No. 272. Argued April 26, 29, 1918.—Decided June 10, 1918.

Patent No. 950,402, granted to W. F. Phillips, for a gearing device applied to a washing machine whereby the operation of wringing, in either direction, may be conducted and controlled simultaneously with the operation of washing, or separately, with one motor, is void for want of invention.

A combination of old elements, evolving no new coöperative function and producing no new result, other than convenience and economy, *held* not patentable.

231 Fed. Rep. 988, affirmed.

THE case is stated in the opinion.

Mr. Melville Church for petitioner.

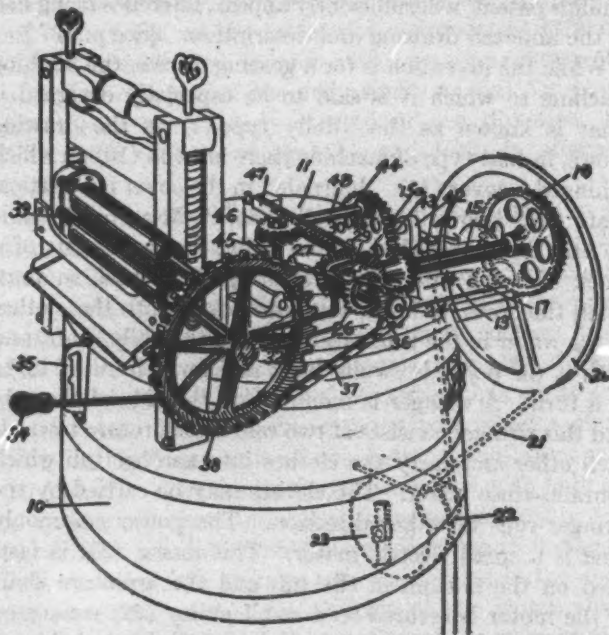
Mr. Clarence E. Mehlhope for respondent.

MR. JUSTICE DAY delivered the opinion of the court.

This suit was brought by the Grinnell Washing Machine Company against the E. E. Johnson Company for infringement of letters patent No. 950,402 granted to W. F. Phillips February 22, 1910. The patentee states the object of the invention to be "to provide a gearing

device of simple, durable and inexpensive construction, especially designed for use in operating washing machines and wringers, by means of power applied by an electric motor or other source of power."

The patent has been several times in litigation. In the United States District Court for the Southern District



of Iowa it was held valid and infringed. 209 Fed. Rep. 621. It was again sued upon in the same District Court, and upon appeal to the Circuit Court of Appeals for the Eighth Circuit a decree holding the patent valid and infringed was sustained. 222 Fed. Rep. 512. In the case at bar the patent was sustained in the District Court for the Southern District of Illinois where it was held valid and infringed, and a decree entered accordingly. From

this decree an appeal was taken to the Circuit Court of Appeals for the Seventh Circuit, and that court reversed the decree below, and held the patent invalid. 231 Fed. Rep. 988. A writ of certiorari brings the last-named case here.

The gearing device, which is the subject-matter of the Phillips patent, will sufficiently appear, reference being had to the annexed drawing and description. [See p. 427.]

While the invention is for a gearing device, the washing machine to which it is said to be especially designed is what is known as the "dolly type." As the drawing shows, in that type of machine there is a tub (10) on which is hinged a cover (11). Journaled in the cover is a vertical shaft (45), known as the dolly shaft. Mounted to slide up and down this shaft is the dolly, which consists of a block of wood with pins projecting downward, so that, when the cover is down, the pins extend into the clothes in the water in the tub. In operation the dolly shaft, and with it the dolly, is swung back and forth from $\frac{1}{2}$ to $\frac{3}{4}$ of a turn. A wringer is mounted on the side of the tub, and this wringer consists of two rolls which rotate towards each other and carry the clothes into another tub which contains rinse water. The clothes may be carried by the wringer rolls in either direction. The power commonly used is a small electric motor. This motor (23) is fastened on the bottom of the tub and the armature shaft of the motor is secured to a small pulley (22) connected by a belt (21), with a balance wheel (20) journaled on a stub shaft supported from the bracket (13). This large pulley wheel or belt wheel has secured on the hub a small spur gear pinion (17), which meshes with a large spur gear wheel (16), which is secured on the outer end of the horizontal power shaft (15), which is journaled in two bearings (14) projecting upward from the bracket or bearing. When the motor is running the train of gearing keeps the power shaft (15) running always in the same

direction at an average slower rate of speed than the armature shaft of the motor. The power shaft swings and rotates the vertical dolly shaft back and forth. A spur gear pinion (40), secured on the shaft (15), meshes with the larger spur gear wheel (44), secured on the shaft (43), journaled in bearings (42). The spur gear wheel (44) carries an eccentric gear, which is connected by a pitman (48) with a pin on the horizontal reciprocating rack bar (47). This rack bar is in mesh with a spur gear pinion (46) secured on the top of the dolly shaft, so that the power shaft being continuously rotated in one direction, the dolly shaft (45) is swung back and forth in alternate directions.

From the power shaft (15) a train of gearing to the wringer rolls has secured on it a small bevel gear (15a), which meshes with two mitre gears (26 and 27) mounted on a shaft (24) extending at right angles to the power shaft. The shaft (24) has secured on it, so that it can slide back and forth on the shaft, but must always rotate with the shaft, a clutch sleeve (30), which has on its ends clutch teeth shaped to be engaged with similar clutch teeth on the inner ends of the hubs of the mitre gears (26 and 27). The clutch sleeve is engaged with only one mitre gear at a time, and if it engages with one mitre gear, the wringer rolls are rotated in one direction; if it engages with the other, the wringer rolls are rotated in the opposite direction, so that the shifting of the clutch sleeve reverses the direction of the rotation of the wringer rolls. To do this shifting there is an operating handle (34), which extends beneath the wringer to a position where it can be readily operated by the person doing the washing. The handle (34) is secured on the end of a rock shaft (32), which has an upwardly projecting arm (33) that fits into an annular groove (30), into the clutch sleeve (29), so that as you swing the handle the clutch sleeve is moved from one position to another. The connection between

shaft (24) and shaft (39) on which the wringer roll is secured, consists of a sprocket pinion (36) secured on the outer end of the shaft (24) connected by a sprocket chain (37) with a large sprocket wheel (38) secured on the outer end of the shaft (39).

The method of operation is to place a batch of clothing in soapy water in the tub, and, when the electric motor is started, the driving shaft and the spur gear pinion, secured thereon, are put into rotation; when the hinged cover of the machine is brought down it has the effect of causing the spur gear wheel to go into mesh with the spur gear pinion and to set the dolly shaft and its head into reciprocating motion, thus scrubbing the clothes in the tub. When the cover of the washer is swung up, the gear of the dolly is automatically thrown out of gear with the pinion, the main driving shaft still continuously rotating. The operating handle is shifted so as to cause the clutch sleeve to engage with the hub of the bevel pinion, thereby causing the bevel pinion secured to the end of the main drive shaft to drive the shaft (24) and through the latter the sprocket wheel (36), the chain (37), the sprocket wheel (38) and the shaft of the lower wringer roll, causing the wringer rolls to rotate so that a garment placed between them will be carried outwardly. When the first batch of clothes has been washed, and passed through the wringer, a second batch of clothes is inserted in the soapy water in the washer, and the cover of the washer again swung down, thereby, in the manner described, putting the dolly into action again. While the second batch of clothes is being washed, the operator shifts the handle which controls the wringing mechanism, so as to reverse the motion of the wringer rolls, so that the garments in the rinse water tub may be passed back through the rolls of the wringer, and cast into a hamper. The second action of the wringer rolls takes place simultaneously with the washing of the second batch of clothes.

The net result, it is contended, of the Phillips patent is that the washing and wringing are carried on simultaneously and the operations of the wringer rolls are controlled by the handle described.

The claims alleged to be infringed are numbers five to eight inclusive. Number six was selected by the petitioner as typical in character, and is as follows:

"6. A gearing device of the class described, comprising a support, a power shaft mounted on the support, means for imparting a continuous rotary motion to the power shaft, an upright shaft 45 mounted in the support, a driving device for the upright shaft operatively connected with the power shaft and capable of imparting an alternating rotary motion to the upright shaft, a horizontal shaft 39, a driving mechanism for the said shaft 39 connected with the power shaft and capable of imparting a rotary motion to the shaft 39, and a controlling means applied to the driving device for the shaft 39, for reversing the movement thereof and also for operatively disconnecting the shaft 39 from the driving shaft."

Confessedly all the elements of the Phillips patent are old. The merits of the combination, which, it is contended, involve invention and validate the patent, are that this gearing device, applied and operated as specified, enables the washing of a part of the clothes to be performed at the same time that the wringing process is being applied to other clothes. Thus, it is said, saving time in doing the washing, and, furthermore, by the operation of the control handle the rolls may be reversed or instantly stopped as the need, convenience and safety of the operator may require. These things, the simultaneous washing and wringing, with the operation of the control handle, for the purposes stated, embrace the advances alleged to have been accomplished upon the prior art. In this view it is unnecessary to particularize the prior patents disclosed in the art. The question is, does this

bringing together of old elements accomplishing the purposes stated amount to that combination which is invention within the meaning of the patent law; or does the gearing device, thus applied and used, show only an aggregation of old elements performing well-known functions, producing no novel and useful result entitling the aggregation to the protection of a patent?

It is not always easy to decide this question, as the difference of opinion in the Circuit Courts of Appeals in this case illustrates. Generally speaking, a combination of old elements in order to be patentable must produce by their joint action a novel and useful result, or an old result in a more advantageous way. To arrive at the distinctions between combinations and aggregations definite reference must be had to the decisions of this court. The subject was fully discussed in *Palmer v. Corning*, 156 U. S. 342, wherein the previous decisions were reviewed. The rule stated in *Hailes v. VanWormer*, 20 Wall. 353, 368, was quoted with approval, wherein the court said:

"It must be conceded that a new combination, if it produces new and useful results, is patentable, though all the constituents of the combination were well known and in common use before the combination was made. But the results must be a product of the combination, and not a mere aggregate of several results, each the complete product of one of the combined elements. Combined results are not necessarily a novel result, nor are they an old result obtained in a new and improved manner. Merely bringing old devices into juxtaposition, and there allowing each to work out its own effect without the production of something novel, is not invention. No one by bringing together several old devices without producing a new and useful result, the joint product of the elements of the combination and something more than an aggregate of old results, can acquire a right to prevent others from

using the same devices, either singly or in other combinations, or, even if a new and useful result is obtained, can prevent others from using some of the devices, omitting others, in combination." *Hailes v. Van Wormer*, 20 Wall. 353, 368.

In *Richards v. Chase Elevator Co.*, 158 U. S. 299, 302, the rule was stated as follows:

"Unless the combination accomplishes some new result, the mere multiplicity of elements does not make it patentable. So long as each element performs some old and well-known function, the result is not a patentable combination, but an aggregation of elements."

In *Specialty Manufacturing Co. v. Fenton Metallic Manufacturing Co.*, 174 U. S. 492, 498, the rule was again tersely stated:

"Where a combination of old devices produces a new result such combination is doubtless patentable, but where the combination is not only of old elements, but of old results, and no new function is evolved from such combination, it falls within the rulings of this court in *Hailes v. Van Wormer*, 20 Wall. 353, 368; *Reckendorfer v. Faber*, 92 U. S. 347, 356; *Phillips v. Detroit*, 111 U. S. 604; *Brinkerhoff v. Aloe*, 146 U. S. 515, 517; *Palmer v. Corning*, 156 U. S. 342, 345; *Richards v. Chase Elevator Co.*, 158 U. S. 299."

Applying the rule thus authoritatively settled by this court, we think no invention is shown in assembling these old elements for the purposes declared. No new function is "evolved from this combination;" the new result, so far as one is achieved, is only that which arises from the well-known operation of each one of the elements.

In the gearing specified every element is old. The operations of the wringer and the washing machine, although simultaneous, are independent one of the other. The control of the operation of the wringer is by an old and well-known method. From the coöperation of the ele-

Dissent.

247 U. S.

ments, here brought together, no new result, involving the exercise of the creative faculty which is invention, is achieved. Phillips may have produced a more convenient and economical mechanism than others who preceded him, but superiority does not make an aggregation patentable. *Specialty Manufacturing Co. v. Fenton Metallic Manufacturing Co.*, *supra*. The assemblage of the old elements, and their operation in the manner indicated, may save time, and the mechanism may meet with a readier sale than other similar devices, but these things may result from mechanical skill and commercial enterprise, and do not necessarily involve invention.

To borrow an illustration made at the argument, we think the Phillips aggregation of elements may be likened to the operation of a number of different machines in a factory by power applied from the same line shaft, each operation contributing its separate part to the production of a given result. So in this instance we think the combination accomplished by Phillips fails to show that exercise of invention, producing a novel and useful result from the coöperating action of the elements, which is essential to distinguish patentable combination from an aggregation of old elements so placed by mechanical skill as to do work more rapidly and economically.

We agree with the conclusion reached by the court below.

Affirmed.

MR. JUSTICE MCKENNA dissents.